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Original Articles

BLOOD TRANSFUSION IN THE SMALL TOWN HOSPITAL—A PLEA FOR ITS MORE FREQUENT USE.

WALTER L. FINTON, M.D., F.A.C.S.

JACKSON, MICH.

With the improvement in technique during the past few years a rapidly increasing number of physicians have become proficient in intravenous medication and blood transfusion.

However, the writer has noted with surprise that there are a great many hospitals in small and medium sized cities in which no attempt at transfusion has been made. Good general surgery is being done in these places but for some reason the older surgeons as well as their younger associates have seemed to avoid this simple and valuable procedure.

Today when war time economy urges us to even greater efforts at conservation it seems unfortunate indeed that more men do not have a working acquaintance with blood transfusion.

No doubt a part of this hesitancy is due to the somewhat formidable sounding preliminary blood examination required, with the four group classification of Moss, and the fear of disastrous results if the preliminary blood test is not made and the donor supplied from the proper group.

The preliminary blood test should always be made for the protection of the patient. This has been emphasized by every writer on transfusion. But the practical point that we have not seen mentioned, a feature that is causing undue hesitancy, is that it makes absolutely no difference which particular group (numbers I., II., III. or IV.) a donor is in, as long as the patient's serum does not agglutinate this prospective donor's cells. The group classification is very useful in large clinics and medical centers where a number of paid donors are available, but for the operator who has to secure a new donor almost every time he transfuses a patient it is not essential.

Mother's blood may be used to transfuse the new born without the preliminary blood test. And in extreme emergencies a brother or a sister, or the parent that the patient most resembles may be used. This is, of course, not absolutely safe, but is justifiable.

This well known preliminary blood test is very simple but might it be stated again: Secure two drops of the patient's blood in one cc of 2% solution of sodium citrate in a small test tube (No. I.); two drops of donor's blood in same manner in a test tube (No. II.); about fifteen drops of blood from patient and donor in test tubes III. and IV. respectively. After centrifugating for a few minutes two platinum loopsful from patient"s serum (tube III.) are put on a cover glass and one loopful of the donor's cells from tube II. is added to the serum and the serum-cell drop mixed. It is then examined as a hanging drop. If agglutination is going to take place it usually does so within two minutes, but it is well to shake or jar the glass slide and wait fifteen minutes before discarding. The donor's serum (tube IV.) and the patient's cells (tube I.) are mixed and examined in the same manner. Agglutination here, however, is not a contraindication to transfusion. So that with no agglutination between patient's serum and donor's cells, this prospective donor may be used for the proposed transfusion. The importance of a Wassermann

test on the donor cannot be over-estimated and should always be made on all donors.

One essential is required for safety. The serum of the recipient must not agglutinate the corpuscles of the donor. A fatal "anaphylactoid" reaction may follow failure to observe this rule.

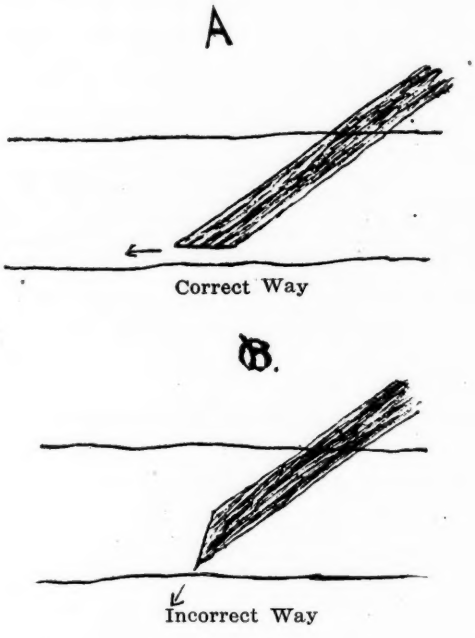
METHODS.

No detailed discussion of the various methods of transfusion will be attempted here. The Carrel method of direct blood vessel anastomosis between donor and patient and the two canula method (Crile-Bernstine) are no longer used to a great extent. The multiple syringe methods of Linderman and Unger are still used by many. Here three or more glass syringes of at least twenty cc capacity are required. A larger number of assistants are needed and one must make a continuous effort to prevent clotting and to keep the needles open. The latter criticism also applies to the Unger syringe method. The Kingston Brown tube and Dr. Nelson A. Percy's modification of it are popular in a few clinics. This method requires incisions and the sacrifice of superficial veins. Not only is this procedure more painful, but with the constantly increasing tendency to give intravenous medication it is unfortunate for an individual to unnecessarily lose his superficial veins.

The sodium citrate method of Richard Lewisohn is perhaps as satisfactory as any method for the physician who is called on only occasionally to do a transfusion. Here 10 cc of a 2% sodium citrate solution is mixed with every 100 cc of blood drawn. The required amount of freshly sterilized citrate solution is put in the receiving flask and the blood allowed to flow into the solution, an assistant constantly stirring to insure prompt mixture and to prevent clotting. It is advisable but not absolutely necessary to strain the blood once through gauze to be sure no clots have formed.

An occasional criticism of the citrate method has been made. Reactions do sometimes occur. But they are usually not severe, and the use of a chemically pure sodium citrate has greatly reduced the degree and frequency of these reactions. In our limited experience, which has been confined to pernicious anaemia, hemorrhage and septicaemia cases, there have been no unpleasant effects.

Perhaps more failures have occurred in securing blood and in introducing blood into the recipients' veins by trying to use needles of too small caliber, than from any other cause. A good rule is to use the largest needle that will readily enter the vein. A Kolinski needle, 16 gauge, is very satisfactory.



Notwithstanding the advise of some writers to the contrary, the best way to insert the needle is with the bevel down, parallel with the axis of the vein so that the vein will not be so easily transfixed and the lumen lost. (Fig. A.) Veins are frequently hit and then transfixed. (Illustrations.)

As a rule incisions are not necessary. After the needle has been introduced into the vein of the recipient, the use of a universal stop-cock to connect the blood container tube with the needle greatly facilitates matters, and will often prevent the operator from "losing" the vein after the lumen has been entered.

The amount used varies with the age, size, etc. It ranges from fifty to seventy-five cc in infants, to from four hundred to seven hundred fifty cc or more in adults. The larger amounts

as one thousand c. c. or over, which were formerly given, are now given less frequently. The present tendency is to use smaller amounts and to transfuse oftener.

The procedure is repeated once a week as long as required. The same donor, especially if the amount be large, is not used again as a rule for from four to eight weeks.

The most common indications for blood transfusion are: severe secondary anaemia, primary anaemia (so called pernicious anaemia), hemophylia, purpura of the new born, severe systemic infections, especially of staphlococcus and streptococcus types, gas and benzol poisoning. There are a few other conditions for which it has been used.

It might not be out of place to again emphasize the intra-venous administration of normal saline in severe hemorrhage cases and other acute conditions, while waiting for the preparation of blood.

The heart action in these cases will improve wonderfully. Sudden failure of heart action after severe hemorrhage is not entirely due to the loss of the blood itself, but results from a lack of fluid upon which the heart can work.

SUMMARY.

(1) Do not let the lack of knowledge of what particular group a patient is in prevent the employment of this valuable procedure.

(2) The sodium citrate method is very simple and satisfactory, and is therefore especially recommended.

(3) Large sharp needles should be used and they should be inserted with the sharpened plane parallel to the axis of the vein.

(4) In acute conditions,, such as severe hemorrhage a normal saline, should be given intravenously while waiting for the preparation of the blood.

TREATMENT OF BRIGHT'S DISEASE.*

J. H. DEMPSTER, A.B., M.D.
DETROIT, MICHIGAN.

Nearly one hundred years ago chronic nephritis was defined as a clinical entity by Richard Bright of Bristol, England. Bright was one of the noted galaxy of clinicians who made Guy's hospital of old London famous. His "Researches in the Pathology of Diseases of the Kidney" in 1827 described the signs and symptoms of the chronic inflammatory disease of the kidney, which has since become popularly associated with his name. Bright was the first to make chemical and microscopic examination of the urine. Chronic nephritis is a more or less definite clinical entity in which the diagnosis may be made without much difficulty. We exclude such surgical diseases of the kidney as hydronephrosis, pyonephrosis, tuberculosis, neoplasms and suppurative processes within the kidney, leaving the historic Bright's disease, chronic nephritis. The etiology includes the inorganic poisons, chronic infections of the streptococcus and pneumoccus, the latter less frequent, and arteriosclerotic changes which involve the kidney. Elliott, Journal of the A. M. A., September 26, 1917, discusses the etiology of chronic nephritic and hypertensive vascular degeneration. The cause of acute nephritis is bacterial invasion of some sort, usually as we said, streptococcus. According to Ophuls, there is no sharp line of demarcation in the anatomic features of acute, sub-acute and chronic nephritis. To ascertain the exact cause of chronic Bright's disease is not so easy as one might suppose. inasmuch as we usually have to rely on the patient's story which may be in effect that he had scarlet fever, tonsilitis or some other acute infection years before, probably as far back as childhood. As to the extent to which syphilis is a causative factor of chronic nephritis, it is hard to determine. Warthin stated that what was often diagnosed as nephritis was a protean form of syphilis. Syphilitic gummata of the kidney are rare. The status of syphilis in the etiology of chronic nephritis, according to Elliott, is uncertain. Ophuls thinks that spirochaetes cannot produce kidney lessions such as those produced by other bacterial infections. In studying 40 cases of chronic nephritis, Elliott found tonsilitis to be the cause of nine; dental sepsis four; syphilis three; chronic endocarditis and pneumonia

*Read before State Medical Society at Battle Creek, 1918.

three each; other conditions such as puerperal nephritis, bronchitis, infected sores of the foot, scarlet fever, pyelitis, furunculosis, chronic sinus infection, one each. In six of the cases the causative factor was unknown.

The cardinal symptoms of chronic nephritis are, besides albuminuria, which, of itself, does not necessarily mean nephritis, more or less enlarged and forceful heart action, hypertension, changes of greater or less degree in the eyegrounds and casts in the urine: sometimes we get only a trace of albumin which might be easily overlooked, unless one of the more delicate tests be employed.

DIURETICS.

Perhaps one of the important features in connection with the treatment of chronic nephritis is the hitherto almost universal proceedure of administering diuretic drugs. Christian, of Boston, discusses the use of diuretics. His viewpoint impresses itself on me as being so rational that I shall state at length his position. He believes that in acute nephritis, basing his opinion on animal experimentation, that the various diuretics, theobromine-sodium-acetate, theocin, caffein, potassium acetate and water are injurious, that their effect measured by renal excretion is nil, inconstant, or actually depressant, depending upon the severity of the renal lesion, and concludes with the positive statement, "I have yet to see the case of severe, acute nephritis in which I felt that diuretic drugs did any good." Patients with edema of cardiac origin are the more numerous, presenting as they do myocardial insufficiency, often showing auricular fibrillation and other forms of arythmia. In fact where edema is present in chronic nephritis, it is largely of cardiac origin and accordingly we have a marked improvement at times on the administration of digitalis. I prefer a reliable tincture, to the more or less indifferent infusion. Christian claims that diuretics have very little effect in increasing the urinary output in a true nephritis. The other diuretic drugs are effective in the descending scale. Diuretic drugs are further of but very little use in treating uremia. I quote Christian:

"If I were to attempt to sum my views as to the use of diuretic drugs in nephritis I would say that in uncomplicated nephritis of all types diuretics are either not indicated because there is no need for increased urinary output, or where there is a need for diuresis to remove oedema or detoxify, they do no good. In other words, in nephritis as such they should not be used. Reduction of fluid intake, salt—poor diet, sweating and purging are better methods for removing oedema. For toxic symptoms bleeding, sweating and purging are more efficacious than diuretic drugs. On the other hand in patients with cardiac insufficiency and relatively little organic renal lesion diuretics are extremely useful to aid in the removal of fluid accumulated in the body. Under these conditions they seem to work best when given intermittently in part because of their tendency to cause nausea, and in part because study of renal function indicates that frequently following very active diuresis, renal function is temporarily depressed. They are most efficient when given after a short period of digitalis therapy. In the patient with oedema of nephritic origin without cardiac insufficiency digitalis alone, however, in my experience produces no diuresis, and when followed by a diuretic drug, little or no increased urine flow results."

USE OF OTHER DRUGS.

Regarding drug treatment in general, there are no remedies that can improve the damaged kidney cells themselves. Basham's Mixture, so largely prescribed in nephritic cases, is almost useless. Stengel places it in the category of placebos.. Often where the meat diet is reduced materially or eliminated altogether it is desirable to administer iron. I favor the hypodermic injection of iron in such cases, especially to combat the anemia which is often an acompaniment of chronic Bright's. Iron is best given in organic combination, as I shall point out presently. Drugs should not be used to reduce vasomotor tension, besides any means that we have at our disposal for the reduction of blood pressure have only a temporary effect and that effect is on the systolic pressure only.

Saline cathartics are useful and preferable to calomel on account of the selective affinity of mercury for the kidney.

ACTION OF ADRENALIN.

The internal secretions have been brought into service in the treatment of nephritis. Ercolani in 1910 called the attention of the medical world to the advantages of treating nephritis by means of extracts of the suprarenal gland. The Italians have employed this method somewhat extensively. The anatomic proximity of the suprarenal gland suggests the possibility of its being affected in a process which leads to degeneration of the kidney. The adrenals suffer severely in a nephritis, which is traceable to diptheria, typhoid or smallpox. The conditions, such as disturbance in the heart muscle, and bulbar and neurotic changes are attributed to suprarenal insufficiency. Ercolani administers adrenalin even in doubtful cases. Roux claims that adrenalin regulates the kidney as digitalis does the heart. Its marked vasomotor constrictive powers serve to modify the epithelium of the kidney, which has been altered by toxemia. Adrenalin has, therefore, the double action of a neutralizer of toxins and of vaso-constrictor, which conquers infection and corrects the deranged condition and function of the kidney cells.

I have had no experience with adrenalin in nephritis.

A great deal of attention of late has been given to focal infections. The clinican should not overlook the tonsil or carious teeth as possible sources of kidney infection, and should not fail to carry out the necessary operation.

Vaccines might be of advantage especially in those cases in which there are no manifest infective foci, or in cases in which the source of infection cannot be removed by surgical means.

TREATMENT OF ACIDOSIS.

Acidosis is one of the commonest of pathologic states, almost constant in the latter stages of nephritis and perhaps a constant accompaniment of most other conditions, especially with the approach of death. It is more than probable that the coma which precedes death in all diseased conditions is the result of acidosis. Acidosis involves a depletion of the body's alkali reserves, and specifically a depletion of the bicarbonate of the blood. Acidosis may be due to the production of acid, the ingestion of acid, lack of alkalies in the food, failure to eliminate acid phosphate but always, according to Henderson (Science, July 1917), involves at least a diminution in the concentration of bicarbonate in the blood. Acidosis then is a state of diminished sodium bicarbonate in the blood. A means of recognizing acidosis is one which Henderson, in his paper, describes as a simple physiological test which depends upon an observation that in different individuals the amount of soda administered by the mouth necessary to make the urine alkaline is a variable quantity. Clinically the only symptom that may be considered positively pathonogomic of acidosis is hyperpnea or deep breathing, the so-called "air hunger. A cherry-red coloration of the lips is occasionally observed but is of little diagnostic value.

Howland and Marriott Baltimore in the Pennsylvania Medical Journal advise the use of alkalies in all treatment of acidosis. Sodium bicarbonate administered either by mouth or intravenously is prefarable. One to four grams may be given by mouth at a time in a watery solution, at intervals of not less than two hours. The intravenous method is indicated where on account of excessive nausea the sodium salt cannot be taken by mouth. The intravenous solution should be 4 per cent. in strength and made of freshly distilled water. Sodium bicarbonate in bulk has been found to be always sterile. Accompanying this the patient should be given copious quantities of water necessary for elimination of acids whether neutralized or unneutralized.

The addition of five or ten grams of soda to the food per day is enough to make the urine of a healthy person alkaline, and if more than that is retained, experience justifies the conclusion that a state of acidosis exists. If sodium bicarbonate is administered at frequent intervals in quantities just sufficient to make the urine as alkaline as the blood, acidosis can-

not exist. Henderson advocates the testing of the urine with litmus paper obtaining the so-called amphoteric reaction, namely, that of turning blue litmus red and red litmus blue. In any serious illness the test for acidosis should be made and the acidosis remedied. Fischer employs alkalinization in the treatment of acidosis of nephritis, giving sodium bicarbonate in large amounts. Henderson thinks the quantity of sodium bicarbonate administered should be sufficient only to correct the acidosis. Its excess or deficiency should be checked up by frequent examination of the reaction of the urine.

The dietetic treatment of nephritis has received great attention during the past five years. So important, in fact, has the study of dietetics become in the treatment of this condition as to fundamentally change the therapy which is not a true nephritis, the kidney shows of nephritis. In the parenchymatous form, an inability to secrete water and salt. In this condition there is, however, little nitrogen retention so that the dietetic treatment consists largely in a restriction of the intake of water and depriving the patient of salt. The supplies of fluid not required to maintain the proper ratio will be eliminated. It is estimated that as much as six or seven pounds of fluid may be retained in the deeper structures without producing a visible edema. Probably the treatment of edema of parenchymatous nephritis by salt retention is the most important advance in the treatment of this condition.

In true interstitial nephritis there is practically no retention of water and salt. The patients do not have edema but we do have a marked retention of nitrogen resulting from the metabolism of proteins. The kidney shows inability to excrete uric acid because being eliminated with the greatest difficulty it is the uric acid, which is the first to be retained. As the nephritis becomes more severe, the kidney is unable to eliminate urea. In the majority of severe cases, we find not only retention of uric acid and urea but also of creatinin.

The nephritic patient requires about the same amount of protein as the patient suffering from any other disease, namely from one-half to one-fourth gram of protein per kilogram of body weight, or in other words, the patient who weighs 150 pounds should have from 40-50 grams of protein per day. It has been proven by physiologic tests that a man may spare his body protein by taking carbohydrates and fats. Lemonade diet, described by Chase (Medical Clinics, November, 1917) furnished the required energy in-take in the form of carbohydrates. In severe cases, the patient should be put on lemonade diet of four glassfuls per day, which provides him with 1242 calories and 8 mg of iron. A patient can subsist for three or four days with four glasses of lemonade a day without drawing upon his body proteins. The first demand upon his muscles for energy will show itself in an accelerated pulse rate, showing that the heart muscle is being taxed. Proteins are necessary for keeping up strength, though not for energy. The condition of the kidney, however, as regards nitrogen excretion will not permit of the high protein diet. Proteins are found to vary markedly in their nutritious value. Chase makes the distinction between what he calls complete and incomplete proteins: the former are furnished by such foods as eggs, meat or milk. The latter are present in vegetables and grains. Incomplete proteins must be supplemented by a minimum amount of the complete protein and vice versa.

A supply of the mineral elements of food in the treatment of nephritis is very important, for death will come more quickly to the patient whose diet is deficient in the necessary constituents than to one subject to starvation. There is a general tendency among nephritics to become anemic, as already pointed out, hence the necessity of providing a diet rich in iron. The daily requirement of iron is 15 mg. Iron is much more readily assimilated when given in organic combination than in such inorganic mixtures. No prescription of iron medical agents will take the place of iron in a diet. Among the articles of diet rich in iron are raisins, rye flour, oat meal, prunes, spinach, lettuce, white potatoes. A condition frequent-

ly, in fact, usually present particularly in the advanced nephritis is acidosis with dyspnoea. Acidosis, in a word, is due to the inability of the kidney to eliminate the normally formed acid substances, particularly the acid phosphates. This condition calls for a diet with a marked alkaline ash such as fruits, leaves, and tubers. Among the articles of diet, which are comparatively basic are spinach, prunes, raisins, carrots and those with a marked acid ash are pearl barley, oatmeal, rice and white flour. It is well to observe this characteristic of foods in not only nephritis, but in the diet of children, as well as conditions which show a tendency to acidosis. Nephritics who show a tendency to acidosis should avoid oatmeal, rice, wheat, etc. Far better pay attention to this detail in diet than to endeavor to offset acidosis by the administration of sodium bicarbonate, which though often indicated has a tendency to destroy the appetite. Another feature that should not be overlooked consists of what are known as food accessories such as vitamins. To avoid scurvy calls for an addition of uncooked fruit to our dietary. The banana is a very valuable food. This is because it is of value in furnishing alkaline ash, is low in protein, and being mild in flavor, can be taken in quantity for some time agreeable to the patient. If used raw, bananas must be perfectly ripe, in which state they furnish an antiscorbutic element. In making bread for these patients phosphate baking powder should not be used, since the nephritic is unable to eliminate phosphates through the kidneys. Bread which contains considerable salt and phosphate baking powder is very apt to produce retention.

*Sherman Chemistry Food and Nutrition.

DISCUSSION.

DR. M. A. MORTENSEN spoke on the treatment of Nephritis and advocated the exclusion of Protein in uremia acidosis; and the use of fruits, restricted diet rest and the increased elimination of the skin.

DR. ROTH, Battle Creek, that as a means of diagnosing acidosis, the power to ho'd the breath was quite hopeful also the instrument devised by Merritt whereby it was possible to determine the Co^2 tention in the alveolar spaces which is directly proportional to the amount of acidosis.

DR. W. DE KLINE, Flint, averred that Dr. Dempster should be given credit for a great work and urged every one to read his paper. In closing Dr. Dempster had nothing more to add.

EXTRAVASATION OF URINE.*

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By extravasation of urine is meant its escape into the adjacent tissues of the urinary tract. It is perhaps the gravest complication to the various pathological lesions of this canal of elimination.

Because of its destructive ravages, its very high mortality rate, the fact that it is by no means uncommon, and that it is but rarely presented in general meetings of this society, I wish to relate a few experiences and offer the subject for discussion.

In the Urological service of St. Mary's Hospital, Detroit, the various types of these sufferers are frequently met, and I wish to sketch some observations of cases treated in the service of Dr. F. W. Robbins and myself, briefly calling attention to pathology, symptoms and treatment.

The fact that this condition usually occurs in debilitated subjects who have consistently neglected a contracted stricture of the urethra, may be rightfully charged as the primal cause of the large death rate, but failure to recognize early the warning signals, improper or delayed treatment, must in many instances share the blame for failure.

CLASSIFICATION.

For the purpose of orderly review, extravasations are best classified into two general groups, first those of normal urine from bladder to urethra in which no previous stenosis existed, and, second, septic extravasations, which are nearly always associated with narrowings of the urinary outlet. The first type are generally the result of injury or accident, which cause fracture of the bones of this region

*Read before the Michigan State Medical Society at Battle Creek, 1918.

and produce a tear in the urethra or bladder. They are by far the less frequent, with usually more hopeful prognosis, though the gravity of the injury generally determines this ratio.

From observations of Simon and Menzel, and later proven by other workers on this subject, it has been shown that normal acid urine may flow over a fresh wound surface and usually produce no trouble unless due to bacterial action, but alkaline urine will kill healthy tistue and cause sloughing very quickly.

Extravasation of normal urine does its damage as a rule by pressure and mechanical irritation, which is followed by infection and necrosis and hence delays the untoward symptoms until septis appears several days or even weeks after the injury, and the original rupture is healed. As an example of this type of extravasation, the following cases will serve:

Case I. A. J., aged 26, hotel porter, admitted to St. Mary's hospital one hour after being crushed by elevator against a floor landing. There was severe fracture of pelvic bones and unmistakable evidence of bladder rupture. After supra-pubic incision, the rent in the bladder wall was found and closed. The surrounding tissues were cleansed of urine as thoroughly as possible and the bladder wound was united without drainage. The patient voided after two days naturally and the bladder wound healed nicely. But a few weeks later the patient died of sepsis, which could be traced to no other source but the escaped urine, which had evidently not been removed at the time of the operation.

Case II. J. T., aged 33, butcher entered St. Mary's hospital December 3, 1917. Bones of the pelvis had been broken two weeks previous by horse falling on him; he was seen at his home immediately after the accident and there was evidence of hemorrhage from the urethra. An attempt was made to pass a catheter unsuccessfully. Supra-pubic drainage was instituted by the surgeon who had seen him first and because of unsatisfactory home surroundings he was sent to the hospital for better care. Examination after his entrance to the hospital disclosed the fact that the urethra had been ruptured at the vesical neck and an effort was made to keep a rubber catheter in the canal, but this was expelled repeatedly by contractions of the urethra. Because of the very severe fractures and general condition it was not deemed advisable to further interfere surgically. The cellular tissues gradually became more septic from the continual irritation of the urine and the patient died from urinary septicemia about one month later.

From these two cases some suggestions are apparent. If the patient is seen early and the tear located, repair should be made at once if the urine is clean, but particular care should be exercised to clean out what urine has escaped to the surrounding area. Drainage of gutta percha should be left in from two to three days in order to take care of what we can not reach with other methods. If the urethra has been torn external urethrotomy is indicated and after suture of the wound an indwelling catheter is best left in the urethra from three to four days. If the cases are seen late and sepsis is already present, the choice is only for complete drainage of the damaged and gangrenous tissue.

Because of the relative infrequent number of this classification of cases and the far greater percentage of cases of the septic urine infiltrations more attention will be given to these infected types.

No extravasations have been met in our experience higher than the bladder, and therefore reference will only be made to those pathological conditions between the meatus and the bladder.

ETIOLOGY.

A review of the literature on the causes of extravasation shows the complete change of many of the fundamental ideas held regarding this malady.

Formerly, the accepted view held was, that all urinary pouches and dilatations of the urinary canal, as well as infiltrations and extravasations were caused by hydrostatic pressure of the urine against a weakened thin urethral wall by the continued distention of bladder, the urine bursting through and causing these complications.

Escat and Gottet deny that such a clinical picture exists of mechanical extravasation, and Keyes adds that the violent straining and agony suddenly relieved by a feeling of something giving away in the perineum and followed by extravasation is but a description devised to fit a theory.

Sir Henry Thompson describes this relief in his lectures as the clumsy effort on the part of nature to perform the work of the surgeon. The multiple fistulae in the perineum described by someone as the sprinkling pot variety are evidence of the results of such effort when the sufferer's life is spared.

That the explanation of such conditions from mechanical pressure alone is inadequate seems apparent from the following reasons:

First: The extravasation may take place in front of the stricture.

Second: That in some instances there may be no stricture, or the narrowing, if it exists, is very slight.

Third: There are cases in which there is apparently no communication to the urethral canal.

Fourth: Albarran and Delbert have shown that there is no urine in some of the cases they have examined, and the fluids thought to be urine are some of the products of acute phlegmonous infiltration.

As an illustration of classification No. 2, and the only one of its kind observed in my experience, the following case is offered:

Case III. Mail carrier entered St. Mary's hospital after development of a large swelling in the perineum and scrotum. He had been a sufferer from partial retention for several years, but denied history of gonorrhoea or injury.

The patient had been watched for several days, during which time the swellings grew larger, and suddenly, after a violent straining, he felt something give way, and his symptoms rapidly grew worse. Diagnosis of extravasation was easily made, as the red area of edema was rapidly mounting toward the umbilicus, and the scrotal skin was gangrenous.

After several incisions were made to drain, a filiform was introduced into the bladder, followed by a No. 12 F. steel catheter. On inspection of the meatus it was observed that it was of the pin point variety, and evidence of an old scar was apparent.

After meatotomy was performed a large calibred sound easily entered the bladder, with no further evidence of stenosis. The destruction of scrotal tissue was so extensive in this case that both testicles were exposed, but with persistent care given by the intern on our service, not only was the period of recovery short (about five weeks) but the patient left the hospital with the scrotal skin entirely regenerated.

In the light of the recent researches, the modern theory, therefore, rather explains this malady and its essential phenomena as an inflammatory rather than a mechanical complication of stricture.

In nearly all urethras strictured over a long period of time the area of peri-urethral inflammation exists that may at any time develop into an abscess. A suggestive fact is that many of these infiltrations and urinary abscesses connected with them originate in the glands of Littre and Cowper and are manifested as perineal abscesses.

The area of trouble is usually behind the stricture, but rarely may be found in front of the scar, and may cause dilitation of the urethra, peri-uthritis, peri-urethral abscesses or gangrene of the urethra.

These suppurations may or may not break into the urethra. If they do, the urine enters the already infected district and aggravates the trouble by adding secondary infection. The urinary element then becomes an important factor of the process, but is not the usual agent.

While in the beginning of the patient's stricture he may have symptoms of bladder irritability, due to irritation in the region of the trigone, which condition produces frequent desire to urinate, as the stenosis increases fibrous degeneration takes place, the bladder wall loses its tone, which predisposes to pathological changes in the old debilitated individuals stricken with these diseases. The course followed by the fluid extravasated is determined by the anatomy of certain structures involved

ANATOMICAL CONSIDERATIONS.

The dividing planes of the perineum are the fascia and the folds of the triangular ligament. The superficial layer of the perineal fascia is attached laterally to the pubic arch; posteriorly to the triangular ligament; anteriorily it continues up over the cord and abdominal wall, and medianly to the shaft of the penis. The triangular ligament is attached laterally to the pubic bone, and its base fuses with the

superficial fascia. This divides the perineum into two compartments, the membranous lying behind the triangular ligament. The three common varieties of extravasations are, viz:

(A) When the urethral break is anterior to the anterior leaf of the triangular ligament;

B) In which the leakage takes place between the two layers of the triangular ligament;

(C) In which the opening is behind the posterior leaf of the triangular ligament.

In the first classification the process may burrow its way forward into the cavernesa and appear on the dorsum of the penis or more frequently it breaks through and makes its way to the areolar tissue of the scrotum and may spread up to the symphysis and over the lower abdomen.

In the second class the course taken is toward the perineum and the fluid may extend as far as the tuberosities of the ichium or may break through the perineum. These are the types that discharge pus and urine through the resulting fistulae for a long time.

In the third classification of extravasations the burrowing may be toward the rectum, pelvis, space of Retzius, or may perforate the peritoneum.

SYMPTOMS.

These patients may smoulder with the ordinary symptoms of stricture for a long time and then suddenly complain of swelling along some part of the urethra, with increased pain, more frequent desire to urinate, or with complete retention.

If the extravasation is slow and gradual it may be followed by abscesses which open and drain for a long time. However, if the process is more acute and the escape of fluid is through one of the three routes mentioned above, the local symptoms are those of acute poisoning, with an irritating fluid. The parts become swollen and edematous rapidly, and the skin color will vary from red to purple to brown, and later gangrenous spots will appear as the superficial circulation is interfered with by the deep pressure of the escaping fluids. Blebs appear over the swollen area, which may become enormous, and pus and urine fill these tumor cavities.

The general signs accompanying the local symptoms are as a rule, shock, septicemia, irregular, rapid pulse, anxious expression, dry tongue, glassy-eyed delirium, rapid breathing, and fetid breath. The rapidity of the morbid changes is remarkable, and unless relieved death follows from coma. Cases of this variety are frequently referred to the urologist from another service in which valuable hours have been lost because symptoms of the sufferer were confounded with those of pneumonia, typhoid, malaria, or septicemia of undiscovered origin. This type of patient generally enters the hospital after unsuccessful effort had been made to relieve retention with a steel instrument. Due to stricture, generally in the membranous urethra, the wall has been perforated and the catheter enters the deep compartment. As the canal is narrowest at this point and curves upward it is the most likely damaged and the urine will find its way behind the triangular ligament and extravasate under pressure toward the line of least resistance. In many instances there is a chill following this operation, which is likely to be called urethral chill, and therapeutic measures alone are instituted for the accompanying symptoms, which are as a rule mild at this period of the trouble.

Two such cases entered St. Mary's' Hospital recently. Both had large areas of brawny swelling in the scrotum and perineum, which were being watched at home as ordinary abscesses until properly developed for the incision.

Case IV. Frank C., aged 45. Patient had been a sufferer with urethral stricture for ten years. One week ago consulted physician for treatment and internal urethrotomy was performed under local anaesthesia. Four days later an effort was made to introduce a sound of 23-French calibre. A few hours later the patient began to complain of pain in the region of the bladder with repeated efforts to urinate. The physician prescribed a capsule containing one-quarter grain of morphine and 1-100 grain of atropine. After the second capsule was taken the patient began to show symptoms of collapse with wildly dilated pupils. Twenty-four hours later I saw the patient, discovered a large brawny, swelling on the right side of the perineum.

extending toward the tuberosity on that side. He was immediately ordered in the hospital, and incisions were freely made in the diseased areas. A finger introduced into the cavity on the right side easily found its way into a rent in the membranous urethra after external urethrotomy was done. The patient died in twelve hours, never having regained consciousness.

In all long standing cases of stricture granulations are always present to a greater or less degree, and due to the constant intra-urethral pressure during attempts at urination during partial or complete retention, we may have perforation through a small area of ulceration, which forms a periurethra abscess, accompanied by the usual chills and fever. The abscesses may later spread into the pelvis of the perineum and scrotum and may not be diagnosed until the sudden appearance of shock and other alarming signs. Care, therefore, should be taken to inspect diligently the perineum in all patients who are strictured and have partial retention and who show symptoms of sudden complete retention, accompanied by sharp pain, chill, sweats, feeling of something giving away, followed by rapid swelling of the perineum and scrotum, as this means rupture of the wall of the abscess into the urethra and beginning urinary infiltration.

TREATMENT.

As to the treatment of these grave conditions, the theory is sufficiently plain—establish thorough drainage and prevent further extravasation.

In considering the prevention of this complication I wish to endorse the point made by Wolfer regarding puncture of the bladder.

Frequently it is deemed wise by the surgeon to aspirate the bladder superpubically during complete retention, because of inability to pass a filiform. If we must resort to this emergency procedure, it is best to use a very small calibred needle and follow in a very few hours with a radical operation for drainage of the bladder.

If we use the large trocar such as frequently adopted for such use in the past, the tear in the diseased wall of the bladder is very apt to remain open, and with the refilling of the bladder which is irritated the septic urine is forced through the opening and may extravasate in several routes, particularly the dangerous space of Retzius, and the region being difficult to drain, death may occur before we are warned of any localized signs.

One of the cases entered the hospital one night after considerable damage had been done the canal in an unsuccessful effort to catherize at the distended bladder.

After failure to enter with a filiform under general anaesthesia, suprapubic puncture was done, and the patient was put to bed until the following day; a drainage operation was performed, and the stricture dilated. The patient began to grow worse, despite the fact that the urinary output was normal and no external evidence of extravasation was visible for three days. Temperature and pulse rose rapidly, and the area about the pubis and sides of the bladder became tender, red and swollen. Despite heroic efforts to drain this dangerous region, the patient died of sepsis.

Individual extravasation will of course determine the location of the slits demanded, and it will suffice to add that the entire edematous area should be drained as rapidly and thoroughly as possible, without regard for ultimate disfiguration. Keyes put it, that the timorous incision is the patient's death warrant. The tissues should be squeezed free of all pus and washed well with 1-5000 Bichloride. Necrotis tissue is best cut away at once, and it is a matter of surprise in some instances to note the rapid regeneration of the cells in these regions, after enormous destruction of necrotic areas.

Cases are frequently met in our wards in which the testes have been left bare after the destructive changes have passed, but within a few weeks they are completely covered by new tissue, without the aid of grafts.

The finger should be introduced into any pockets that burrow, and all septic material removed as fully as possible. The after care is important, and an orderly that can be taught to realize the importance of frequent dressings

is a most important and valuable ally in bringing the patient through. Permanganate of potash, 1-5000, has been our choice as an irrigating fluid to cleanse, because of its oxydizing properties, and wet dressings of this same fluid, covered with oily silk, are laid over the areas of destruction.

To establish urinary drainage through its proper channel in many instances is advisable, especially if the urine is not very septic, but in the presence of foul urine, cystostomy, with drainage, and later attention to the stricture, seems to be the safer method of treatment.

TO SUMMARIZE.

1. After leakage of clean urine accurate location with repair of the tear and thorough cleansing of the tissues of escaped urine gives the best chance for recovery.

2. Alertness in observing the patient with long standing tight stricture who have sudden chill and close inspection of the perineum will save many lives by instant attention to the extravasated tissues.

3. Attention to small periurethral inflammations early will prevent urinary extravasation.

4. Drain through the natural channel if possible, but many septic urines are best handled by suprapubic cystostomy.

5. Incise freely all areas of odematous tissue and remove the necrotic sloughs without regard for future disfiguration.

7. Aspirate with small calibred needle when necessary.

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THE TEST OF LABOR.*

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Obstetrics has been about the last branch of Medicine to receive any recognition as a specialty; even at this period we must admit that the attention and consideration given to the pregnant patient is indeed meager. Pregnancy is a physiologic condition, and we have looked upon all antepartum disturbances as inevitable and something to be borne with patience. It is true that often the only comfort we can offer patients is that time will relieve them of their distress. But too often such encouragement is given without any attempt to study the conditions. Labor also is so physiologic, and women have delivered themselves for so many centuries without much aid that we have fallen into the habit of considering everything normal, and hence not interesting or necessary for study, and have just trusted to luck that things would end well.

In spite of this attitude we can readily arouse our memories to past experiences and recall occasions which testify that there are interesting and unusual hapenings even in obstetrics. As in every other field of medicine, so also in obstetrics—the more carefully we study and examine our patients, the more interesting and unusual we find them. It is true that in order to find the abnormal conditions we have to go through a great deal of normal material. But the discovery of an occasional abnormal finding makes it all worth while, and unless we carry out this plan and investigate and examine our patients, we have no right to assume that we have done our best for them. The general practitioner has been and no doubt always will be the obstetrician for the largest number of our women, and rightfully so. But the patient has a right to ask of him that he equip himself so that he can practice his art intelligently. When he has complied with this requirement, then, and only then, will he have done his duty to his patient. The fact that there are still so many problems unsolved does not excuse us for our indifference.

Difficult labor was no doubt one of the first obstetrical problems to demand special thought. The urgency of the condition would of necessity have forced this upon the profession. The importance of the study of the patient during pregnancy not having been taught the laity during the earlier centuries, she usually was not seen until labor was in progress. The at-

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tempts to solve the problem were then directed toward the delivery of the patient, and it was not until a later period that efforts were made to discover the cause for these difficult labors.

Pelvimetry was first practiced in the eighteenth century. External pelvimetry was first attempted, and unfortunately rather definite deductions were made from the earlier observations. For instance, Baudelocque taught that the conjugate vera could be accurately estimated by deducting 7½ cm from the external conjugate. Later it was observed that the solution was not quite so simple, and it was learned that in two pelves with the same sized external conjugate there might be as great a difference as five centimeters in the true conjugate. This at first threw pelvimetry into disrepute, the critics arguing that since pelvimetry was not absolutely accurate or definite, it had no value at all. In spite of its limitations, nevertheless, we may consider that it allows one to draw certain important conclusions. Williams believes that we can, in a general way, say that when the external conjugate measures twenty or more centimeters, the true conjugate will rarely be found shortened. When it measures nineteen or eighteen centimeters the true conjugate is shortened in probably about one-half of the cases. When the measurement is seventeen centimeters or less, pelvic contraction is almost invariably present.

Unfortunately, the true conjugate can hardly be measured in the living patient. In practice the nearest approach to this is the determination of the diagonal conjugate, and this can be done as accurately by digital examination as by any instrument so far devised.

FREQUENCY OF PELVIC CONTRACTION.

We must not underestimate the frequency of pelvic contraction. As mentioned before, the more careful the search for abnormalities, the more unusual conditions we find. Many difficult labors go without explanation because of the neglect of pelvimetry. In the various European clinics statistics show from eight to thirteen per cent. of pelvic contraction.

The writer has looked up the pelvimetry findings of 216 consecutive cases. These measurements were all taken by one worker, and the patients represent the class that come to us in private practice. Probably the percentage of abnormalities is slightly higher than the average, since a few of the patients with pelvic contraction were referred just because of this finding. Using the dimension of the external conjugate as a basis for grouping, the following table can be made:

Size of External Conjugate	Number of Cases	Per Cent.
20 plus	26	12.0
20	76	35.3
19	69	32.1
18	36	16.7
17.5	4	1.8
17	5	2.3

According to Williams we might then consider that the cases showing a measurement of twenty and twenty-plus centimeters are almost sure not to present any pelvic contraction. These cases number 102, or 47.3 per cent. of the series. Those measuring nineteen and eighteen centimeters number 105, or 48.8 per cent, and Williams thinks that a large percentage of these may show some pelvic contraction. Those measuring less than eighteen number nine, or 4.2 per cent., and are almost sure to show some narrowing of the pelvis.

RELATION OF DYSTOCIA TO PELVIC CONTRACTION.

In general, the pelvimetry records in this small series show that about half of the patients could be considered normal in dimension. The other half, although not all definitely contracted, should at least be considered as "suspect." This does not mean that half of all these patients would have difficult labors. But it does mean that we must consider that the possibility of difficult labor does exist.

Pelvic contraction may occur in a variety of forms. From the clinical standpoint we may consider that pelvic contraction may occur at the inlet, or at the outlet, or both. But we

must not forget that dystocia may be caused by other conditions than pelvic contraction. Besides the resistance offered by the birth canal, we much reckon with the size and position of the fetus, as well as the nature of the expelling forces. A moderately contracted pelvis might allow an easy birth of a moderate sized and normally presenting fetus, if the uterine forces were sufficiently strong. But on the other hand the same sized pelvis might offer sufficient resistance to a larger fetus so as to make the labor quite difficult, and it might even prevent birth if the expelling forces were deficient. The question of delivery then often becomes a matter of proportion or disproportion between the fetus and the birth canal. And this is the information that the clinical birth record gives us. When we allow a patient to go through a test of labor what we are trying to ascertain is this relationship in size between that particular pelvis and fetus, and each patient presents an individual problem which cannot be determined by a standard of measurements alone.

The clinical records of this series of 216 patients have been studied to ascertain as nearly as possible which of the cases of dystocia could be ascribed to pelvic contraction, or rather to a relative disproportion.

Of the 102 patients with normal pelvic dimensions, eight had difficult deliveries. And we may interpolate here that by difficult delivery we refer to a delivery that requires assistance. In our series a long labor was not necessarily classified as a difficult labor. In six of these eight patients the fetus occupied a posterior position (5-O.L.A.; 1-O.R.A.) In one case the baby was very large, weighing ten pounds and twelve ounces. In the other case the pelvic outlet was contracted, causing dystocia in the second stage. In none was there any disproportion at the pelvic inlet, engagement occurring readily in all cases.

Of the 105 cases, with the external conjugate measuring either eighteen or nineteen centimeters, 14 had difficult deliveries. In 12 cases the disproportion was at the outlet, all these patients having funnel pelves. In these cases engagement proceeded normally and progress ceased when the head reached the outlet. In all these cases labor was terminated by low forceps. In the other two cases there was relative disproportion at the inlet. One patient was allowed to have labor pains for 48 hours, and then the head not having engaged, an abdominal Cesarean Section was performed. The patient recovered, although the convalescence was rather stormy. The other patient had labor pains for sixty hours. The membrane had ruptured two days before labor began. For that reason an abdominal Cesarean Section was considered contra indicated, and a pubiotomy was performed by the semi-open method. This patient died later from embolism.

Of the patients whose external conjugate measured 17½ centimeters one developed a toxemia at 7½ months requiring premature induction of labor. The fetus was small which no doubt accounted for the easy and normal delivery. This calls our attention to premature induction of labor as a treatment for contracted pelves, and its usefulness must not be overlooked. Another patient with the same measurement was given a twelve hour test of labor, but there being no engagement, abdominal Cesarean Section was performed. Two patients with this measurement had spontaneous delivery, one after an 18 hour labor, the other after a 52 hour labor.

Of the five patients measuring seventeen centimeters, two had a relative disproportion at the outlet (funnel pelvis) and required low forceps for delivery. In two there was no engagement of the head after a test of labor, one for 22 hours, and one for 3½ days, and in each case abdominal Cesarean Section was performed, both with good recoveries. One case was brought under our care after two days of labor with unsuccessful attempts at forcep delivery in the home. Failing in this, the patient was sent to the hospital. Fetal death was diagnosed and craniotomy performed. This would not have been a case for either Cesarean Section or pubiotomy, and probably a craniotomy would have been performed even though

one could not have been so positive about fetal death.

These results can be summarized as follows: Of 102 cases with the external conjugate twenty or more, none showed disproportion at the inlet, but one showed a disproportion at the pelvic outlet. Of the 105 cases measuring eighteen and nineteen centimeters, two showed disproportion at the inlet, while twleve showed disproportion at the outlet. Of 9 cases showing a measurement of 17—17½ centimeters, four showed inlet disproportion, while three of the others showed outlet disproportion. These results could be tabulated as in this table:

Size of External Conjugate	Number of Cases	Inlet Disproportion	Outlet Disproportion
20—20-plus	102	0— 0 %	1— 1%
18—19	105	2— 2 %	12—12%
17—17½	9	4—44.4%	3—33%

In this small series there were then six patients who showed some pelvic inlet disproportion (2.7 per cent.). The percentage of contracted inlets was much greater than this, but at labor there proved to be only 2.7 per cent. of disproportion. Of these six patients, four had abdominal Cesarean Sections, one a pubiotomy, and one craniotomy. There was one maternal death, due to embolism following the pubiotomy. The only fetal death was due to the craniotomy.

It will be observed that this series includes no cases with such marked pelvic contraction that one could definitely determine in advance that an operative delivery would be necessary. These patients were nearly all primipara. If the patient has had a previous labor the history will be an important guide. In a primipara the degree of contraction should be decided to warrant a delivery without a test of labor. It is the patient with doubtful proportion, the so-called "border-line case," that requires a test of labor, and by the test of labor we mean such management that the hazards of a subsequent operative delivery will be reduced to a minimum.

INFECTION THROUGH VAGINAL MANIPULATION.

About the middle of the last century Semelweiss and Holmes laid the foundation of our present ideas of puerperal fever. Since then various teachings for its prevention have been brought to us. First we were advised chemical disinfection, then mechanical cleansing plus disinfection and finally the boiled rubber glove. In recent years we have been taught one more point—namely—that a vaginal examination which might be without harmful result if the patient were delivered normally, might be the cause of disaster if the patient were subsequently delivered by abdominal Cesarean Section.

Some years ago Routh published the statistics for Cesarean Section in the British Islands. These showed that the mortality from Cesarean Section was about in direct proportion to the amount of vaginal manipulation preceding the operative delivery. In cases not examined the mortality was very low. The most disastrous results followed Cesarean Section on patients whose delivery had previously been attempted by either forceps or version. In such cases the high mortality was due to infection. The statistics showed moreover that the mortality increased with the length of labor preceding the delivery. Also the early rupture of the amniotic sac added greatly to the mortality.

These observations must be kept in mind when we allow a patient with a moderately contracted pelvis to go into labor. It means first of all rigid asepsis. This means not only careful cleansing of the hands of the obstetrician, but also unusual care in the preparation of the patient. Shaving is preferable to clipping, and careful cleansing is necessary. Since most vaginal examinations are for the convenience of the physician instead of the patient's welfare, they should be scrupulously avoided. Any examinations required for convenience can be made per rectum. By rectal examination one can readily learn, after a little experience, the condition of the cervix, the nature of the presenting part, and the progress of descent. Since early rupture of the membranes adds to

the hazard of a subsequent Cesarean Section, care should be observed not to cause an accidental rupture.

In most cases one can judge fairly early in labor as to whether the head will engage. As to how long one should allow the test of labor to proceed it is rather hard to say. In a given case if there is any slight evidence of descent, additional time should no doubt be allowed before determining the absolute necessity for surgical delivery. On the other hand if at no time there is any engagement, and the presenting part floats on the brim of the pelvis, additional time is probably unnecessary. As shown by Routh an excessive length of labor increases the danger of a subsequent Cesarean Section. However, the writer is of the opinion that as long as vaginal manipulation is avoided the patient is fairly safe, and the danger from increased length of labor is at least offset by avoiding a Cesarean Section in many cases.

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COUNTRY SURGERY IN A COUNTRY HOSPITAL.

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In the last few years, hospitals have been established in many of the smaller towns of the State. I hope that a short account of the work done in one of them may justify its existence and interest the members of this section. The Hubbard hospital began with ten beds; at present an enlarged building provides room for thirty patients. The rooms are large, airy, and well furnished. It contains quarters for the nurses and other help, is steam heated and otherwise fairly well equipped.

Our operating room is small, and the operations are done with, besides the anaesthetist, one assistant and one nurse, who is responsible for the sponges and the condition of the operating room. The most frequently performed operation is that for appendicitis. Up to January 1st of this year, we had 298 acute cases with four deaths. One died of portal thrombo-phlebitis, one from pneumonia, and one from a perforating ulcer of the stomach. This last was in a child of six. Of recurrent cases, there were 339 with two deaths, one from nephritis and one from portal-thrombo phlebitis.

Of gangrenous cases, with more or less pus in or about the appendix quite often not enclosed by adhesions, there were 101, with twelve deaths. Every case, with the exception of three or four moribund on admission, was given the chance an operation afforded.

In all there were 738 cases with eighteen deaths, a mortality of a little less than 2½%. I think that every one of these deaths were preventable by a timely operation. In our community the fatal delay is more apt to be due to the physician being called too late, rather than any fault on his part. In one case the appendix and ascending colon were on the left side, while curiously enough, the pain and tenderness were in the usual place. In another, a child of five the appendix did not seem sufficiently diseased to account for the symptoms, and further exploration revealed a gangrenous Meckel's diverticulum. In a similar case in a girl of twelve, an ovary was found so twisted on its pedicle that its circulation was completely shut off. Two cases of purulent pleurisy developed after operation in pus cases. One left the hospital in a week, before I could find the source of her trouble. Two weeks later I found her chest full of stinking pus. This was evacuated but too late to save life.

The other recovered after prompt operation. Obstruction of the bowels developed once. Enterostomy was done, the bowel washed with saline, and left full of the same. The fistula closed spontaneously in a few weeks. Of hernia we have had 150, of which fourteen were strangulated. All recovered except one, who died suddenly, apparently of pulmonary embolus as he was about to go home. One of the strangulated cases was in a child of six weeks. In this connection, I may state that some years ago I operated on a strangulated hernia in a

*Read before State Medical Society at Battle Creek, 1918.

woman of ninety-four who recovered to live for seven years after.

On the uterine adnexa there were 186 operations, with one death in a case of pyosalpinx. One case had previously been operated on by Prof. Angus McLean for a tumor of the right ovary which the pathologist pronounced malignant. I saw her about a year after with a large growth of the left ovary. The cyst was adherent to every thing in reach, and the intestines and portions of the parietal peritoneum covered with a jellylike or colloid mass. It was removed with great difficulty, but the patient is still alive with no signs of return.

There were eighty-five cases of gallbladder disease, in most of which stones were present with a mortality of eight; altogether too large. In explanation, all were cases of long standing, accepting operation as a last resort. Three died of uncontrollable vomiting, that began as soon as they came from the anaesthetic, one jaundiced case died of hemorrhage that began one week after operation, and the rest as a result of operation in debilitated and aged persons.

In one, reoperated on account of a return of symptoms, a fibrous growth was found on the stumps of the cystic duct, removal of which has resulted in a relief of the trouble.

We have had nineteen cases of ectopic gestation with nineteen recoveries. I have seen three strong women in the prime of life die from internal hemorrhage while waiting for a more opportune time to operate. In view of these facts, it seems almost a crime to pursue the policy of watchful waiting advocated by many in these desperately sick patients. I may say that most of my cases have been operated upon, in private homes, many in the middle of the night, with poor light as it would have been too dangerous to remove them to the hospital, and with results equally good.

Vaginal hysterectomy has been done thirty-nine times with no mortality; abdominal forty-seven times with two deaths. One, a large fibroid died from exhaustion from persistent vomiting; the other was caused by infection in the course of removal of a large gangrenous fibroid. There have been twenty-one cases of intestinal obstruction, with six deaths. Most of these were due to bands from old inflammatory conditions, one to a coil of intestine becoming folded around a Meckels' diverticulum, two to intussception in infants of six months, one of which recovered. I have done three Cesarean Sections, the mothers and babies doing well.

Gastroenterostomy has been performed fifteen times with one death. This was in a case of malignant disease where it was impossible to do the retrocolic operation, and the union gave way at the end of a week. In ulcer of the stomach with stenosis of pylorus the results have been very satisfactory; as a palliative, in malignant disease, I think there has been enough relief given to justify the operation. Twice, gastrostomy has been done; once for a cancer of the oesophagus. The patient fed herself through a tube, and lived in comparative comfort for a year and then died suddenly from hemorrhage from an eroded carotid. The other was sent in as a case of bowel obstruction. I found the abdomen tremendously distended, and the patient suffering intensely. The stomach tube gave no relief either before or after section. On incision the intestines were pushed out of the abdomen, and on inspection, it was found that the abdominal cavity was practically filled by the distended stomach. On account of the precarious condition of the patient, I incised the stomach, stitched in a tube, intending in a few days to reopen and try to relieve the cause of the trouble. But on clamping the tube and giving food, it was properly taken care of. The incision closed promptly and he has remained well so far. There have been twenty goitres, four of which were cystic, eight exophthalmic and the remainder simple causing distress from their size or position. One exophthalmic case died of pneumonia ten days after operation. The ascending colon, with a part of the transverse, was resected for cancer in a woman of sixty; also the splenic flexure and descending colon for malignant disease. The divided ends were closed and side to side union made in

each case with a fairly smooth recovery. There have been three of perforated-ulcer of the stomach with two recoveries. The last case I will cite is one illustrating the ill results of haste and over-enthusiasm in the use of forceps in obstetrics. A young man called on me about one month after the birth of his first child and told me his wife had been "busted." Examination showed that he had told the truth literally. I found a large hole in the bladder, and a complete laceration of the perineum. Fortunately both healed perfectly after a reparative operation.

In all there have been 1266 abdominal operations with forty-five deaths, a mortality rate of about 3.5% and 3069 operations ranging from amputation of finger to excision of pylorus with seventy-three deaths a trifle over 2%. No one has been refused operation if there seemed a chance to give relief or save life.

A SIMPLIFIED METHOD OF ASPIRATING GASTRIC CONTENTS IN HYPERSENSITIVE PATIENTS.

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The various methods of obtaining the stomach contents, or such portions thereof as may be necessary for purposes of examination, may be conveniently divided into simple and complicated. No one will gainsay the fact that in any mechanical process, undertaken for any purpose whatever, a simple method is preferable to a complicated one, provided the results obtained are equally good. It is also acknowledged that overcoming difficulties without complicating the means employed constitutes an improvement. The third point in this connection is that such improvement is still greater, if the very presence of certain difficulties is actually turned to profitable account for the purpose of overcoming them; and the climax of that achievement is reached when such a desirable result is attained by a still greater simplification of the hitherto simplest means.

If these facts admittedly hold good in a general way for any device or discovery, they apply with particular force to the withdrawal of the gastric contents, a procedure which with some sensitive patients amounts to a veritable ordeal. It is the simplification of the process in conjunction with the other advantages I have just touched upon that I propose to place at the disposal of the physician.

It is generally conceded that the so-called "expression method" of Ewald and Boas, the details of which I need not here reiterate, is considered one of the simplest and best. And yet there are a number of contingencies in which the method fails or is superseded by others. And let it be understood that these other methods merely aim at palliating the difficulties, not at removing them, much less turning them to profitable account.

In dealing with the difficulties the physician encounters in removing the contents from the stomach of hypersensitive patients—and only these need be seriously considered in this connection—I may begin with nausea and retching as one of the greatest obstacles to the successful performance of the task. These patients become nauseated at the mere sight or thought of the stomach tube. The very act of cocainizing the posterior faucial wall, which some authors advocate to overcome this unpleasant feature of the proceedings, conduces to the production of retching and is by no means willingly tolerated by this class of patients. Some authors, indeed, go so far as to advise abandoning any attempt at introducing the tube in patients with pronounced retching tendencies, dispensing with this method of examination altogether rather than subject such patients to the ordeal.

It is upon this phase of the question that I have principally concentrated my attention. It is evident that the apprehensions of sensitive patients can not be entirely allayed by persuasion, tact, or skill. The question then arises: Can the unavoidable unpleasantness and inconvenience be shortened, and how? The answer is that it can be shortened and minimized by introducing the tube less deeply—in

fact by not allowing it to enter the stomach at all, and yet obtaining a quantity of gastric contents sufficient for chemical and microscopical analysis.

In devising this process, I have been guided by a consideration of the anatomic fact that the lower third of the esophagus is normally distended, forming a continuous open lumen. As soon as the stomach tube reaches that part, the cardia, following the law of contrary innervation, becomes relaxed, and as a result the gagging and retching of the patient induces a regurgitation of some of the gastric contents into the esophagus, where the fenestrated end of the stomach tube is ready to receive it, and whence it is promptly aspirated by the atmospheric vacuum action of the terminal rubber bulb. Thus it is quite unnecessary for the tube to enter the stomach, and the greater the gagging and retching of the patient the easier it is to obtain a sample of the gastric contents.

This arrangement also overcomes what has long been considered another difficulty, namely, an abnormally low position of the stomach, where the tube can not reach the surface of the gastric contents. The reflex effect of the irritation of introducing the tube beyond the tracheal bifurcation causes the contents of the stomach, however low, to regurgitate into the esophagus through the relaxed cardia and thus obligingly meet the receptive stomach tube half way.

This highly satisfactory and desirable result can not, however, be accomplished with an ordinary stomach tube, such as are generally employed. My tube, (Fig. 1) as described in the Journal of the American Medical Association of November 20, 1915, is peculiarly adapted to meet the requirements. It is made of soft rubber, and, although readily flexible, is rigid enough, owing to its size and the thickness of its walls, to avoid all danger of coiling or kinking in the pharynx or esophagus. It is 32 inches (84 cm) long, and in its lower end, smooth and rounded, is embedded a piece of solid lead. This weighted end is its main distinguishing feature, and facilitates passage down the esophagus, without requiring the act of swallowing or any other effort on the part of the patient. Kinking or coiling of the lower end of the tube in the esophagus, which in other tubes effectually prevents the withdrawal of the stomach contents, can not occur, and thus the disagreeable necessity of withdrawing the tube and making another effort at a more successful introduction is avoided.

The lower end is made solid so that particles of food can not accumulate there and occlude the tube, which is an occurrence of annoying frequency in other tubes. There are two lateral openings, one about 2cm. from the end and the other just above it on the opposite side, which run obliquely upward and are made perfectly smooth in the molding process, forming so-called "velvet-catheter-eyes." Thus, there being no sharp edges, any traumatism or other injury to the mucous membrane from contact is impossible, and the possibility of accidental hemorrhage is entirely done away with. The openings are large, rendering aspiration of even comparatively large food remnants easy. The external end of the tube is connected with an evacuating bulb by means of a short piece

Improved Stomach Tube.

of glass tubing and a soft rubber tube about 16 cm. long.

The entire tube is less formidable in appearance than those generally used, and sensitive patients are therefore more easily persuaded to submit with good grace to its introduction, especially when they are assured that no swallowing or other effort on their part is needed or expected, and that their voluntary participation in the proceedings is simply to keep perfectly still, breathe slowly and calmly through the nose, and not take any notice of what is going to happen.

The instant that retching occurs, the aspirating bulb performs its part of the work, the tube is withdrawn, and the ordeal is over. Even the most apprehensive patients are astonished at the slight amount of inconvenience they experience and are quite ready to have the performance repeated on subsequent occasions, should it be necessary.

It now remains to describe the technic of handling the tube—which, as may be gathered from the above details, is the simplest. The bulb is compressed, and a bend in the soft rubber tube, held with the thumb and index finger of the left hand, prevents the entrance of air. The physician, standing in front of the sitting patient, whose head is inclined slightly forward, moistens the free end of the tube with cold water and passes it directly to the posterior pharyngeal wall, which guides it toward the esophageal entrance. Now the weight in the end of the tube exerts its effect by gravitating down to the laryngopharyngeal opening, where it stops; a gentle push will then help it over the cricoid cartilage, allowing it to glide down the esophagus. At this juncture, or as soon as the tube reaches the lower esophagus, retching will occur in hypersensitive persons. The soft rubber connecting tube is then released, and the terminal bulb, regaining its natural expanded form, aspirates sufficient gastric contents into the tube for analytic purposes.

In exceptional cases it may happen that the muscles of the neck contract spasmodically, holding the tube tightly and thus preventing its downward journey. In these rare instances the patient must certainly be instructed to swallow, which will overcome the resistance, but in the great majority of cases no such resistance will be encountered.

It will be remembered from the foregoing that the correct position of the sitting patient is with his head bent slightly forward. This not only facilitates the passage of the tube through the pharynx into the esophagus, but also prevents it from accidentally entering the larynx, an occasional deplorable mishap.

With all these advantages I hope to have suggested a true simplification of a process which, in hypersensitive patients at least, has often been a disagreeable, difficult and sometimes even impossible task, not altogether devoid of danger.

812 Kresge Building.

Let the Reader Know.—In the latest issue of the American Journal of Syphilis appears an article by J. Sheridan Baketel, "On the Use of American-Made Salvarsan," which is in effect a puff for Metz's Arsphenamine. The reader is informed that Dr. Baketel is Professor of Preventive Medicin and Hygiene and Lecturer on Genito-Urinary Diseases and Syphilis in the Long Island College Hospital; Genito-Urinary Surgeon to the House of Relief of the New York Hospital; Major, Medical Reserve Corps, United States Army. The reader is not told, however, that Dr. Baketel is or was until quite recently in the employ of the A. H. Metz Laboratories (the present name of the Farbwerke Hoechst Co.) and has for some time been the manager of the pharmaceutical department of that concern (*Jour. A.M.A.*, Augusct 24 ,1918, p. 664).

Chloramine—T, Squibb.—A brand of chloramine—T which complies with the New and Nonofficial Remedies Standards. For a description of the action, uses, dosage, and chemical and physical properties of chloramine—T see New and Nonofficial Remedies 1918, p. 156. E. R. Squibb and Sons, New York.

Chloramine—T Surgical Paste-Squibb.—It contains chloramine—T, 1 Gm., in 100 Gm. of a base composed approximately of sodium stearate, 15 per cent., and water, 85 per cent. E. R. Squibb and Sons, New York.

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October

Editorials

MEDICAL EDUCATION.

The setting of educational requirements for medical men by State Boards of Registration and the Association of Colleges has for its purpose the accomplishment of two ends. In the first place it tends to limit the number of practitioners, and, in the second place, it assures the public that those licensed to practice are informed on the best methods that the science and art of the present day permits. That the number of doctors in this country is being rapidly reduced, is shown by the marked difference between the total loss each year due to deaths and the increase brought about by new registrants. Up to the year 1904 when medical colleges flourished wherever sufficient cadavers could be collected to maintain an anatomy laboratory, it mattered little if the restrictions put upon medical instruction became too severe or the requirements too high. The public would not have suffered for a lack of doctors if the colleges had suspended activities all together. The classification of colleges by the A. M. A., however, has done much to change this situation. The elimination of so many colleges providing inadequate preparation for the practice of medicine was also aided very largely by the magnificent donations to many of our leading universities which made it possible for them to offer advantages so far superior to the schools established for profit that competition alone drove many of them out.

An attempt is now being made to put these restrictions to the practice of medicine and the requirements of medical colleges on a definite basis. Such a basis may be one of two kinds. The first resolves itself into a question of how high can we place these requirements without creating an insufficient number of doctors to fill the public need. This is the one toward which we have been working. With the great need for medical men brought on by the war another view-point has established itself and the problem now resolves into a matter of reducing the requirements to a minimum that will produce as many doctors as possible and still make them safe and competent according to modern standards.

When scrutinized in the cold light of efficiency and actual results attained, the practical man will find many faults in our present system of developing doctors. Few of the men who are now practising successfully will deny that a great deal of the material that was crammed into them during the school days has been utterly worthless and amounts to so much gibberish. This applies not only to the premedical years in which the student becomes acquainted with the sciences that help in the understanding of medicine and in which he acquires the habits of study and mental culture necessary for a physician, but it is equally true of the medical course.

The fault does not lie so much in the nature of the subjects chosen for study nor sequence of the courses although the authorities in our colleges seem to devote their attention mostly to these considerations.

A big step forward will be made by our colleges when they begin to eliminate the superfluous from these courses and give more thought to rock bottom essentials. Of what good is it to a student if he can name all the points of the petrous portion of the temporal bone and yet doesn't know the course of the musculospiral or the position of the antrum pylorus?

In a recent examination of medical graduates scarcely any of them could give a correct list of the pus forming bacteria or describe the preparation of an autogenous vaccine. We dare say, however, that few of them would have hesitated to tell what connection Weichselbaum or Frankel have to bacteriology or to have given the dates when the diptheria and mouse bacilli were discovered.

The student spends several hours a week for a large part of a school year in a bacteriology laboratory. What does he get out of it? He makes a lot of slant cultures and stains and agar plates and dumps them out. What does that get him? Familiarizes him with methods —puts him in actual contact with the organisms. For this he spends hours and hours of his time that he is supposed to apply to learning about the human body and how to cure it of its ills. At the end of it he doesn't even know what organisms are not pus producing and it is doubtful if he can even do a sputum examination. Germs cause disease and, therefore, a student should spend many precious moments playing with them and making drawings of them. By the same token sun-light sometimes causes prostration and, therefore, we should have a laboratory for the study of ultra-violet and infra-red rays and perhaps a little astronomy would be fitting. We forget that we are making doctors not bacteriologists nor chemists nor any other kind of specialists.

We are not singling out bacteriology because it is the only course at fault. It perhaps is the most flagrant example of the academic extremes to which our colleges go in attempting to provide a broad scientific foundation for medical students but the same intrusion of unessential study and labor can be found in other branches. The criticism applies also to the teaching of the specialties. He is not interested in the technic of operations that require years of special training. What he does want to know are the indications and the simpler methods of examination that he can apply himself.

The departments of medical colleges should be in charge of men who themselves have been successful practitioners. They alone know what part of anatomy and physiology, etc., is necessary for the future doctor to be informed on. They may omit some of the details of electrolytic dissociation but they are sure to drill in the plain facts that make a man understand his cases.

There should be an hour or two given to gymnastics every day. We would not go to the extreme that some advocate in barring a man from college if he cannot pass a physical examination. Some of our most brilliant lights, notably Janeway and Young and Wm. James, would have been kept out had such a rule existed. Nevertheless, every man is plainly more efficient if his muscles are kept hard and firm and his thorax is fully developed. Such exercise and care of the body is all the more necessary when we consider that most medical students are in the most formative periods of their lives. Furthermore, physical exercise is recognized as a most wholesome influence on morality.

Thus far, we have said nothing about the pre-medical requirements nor the proposed fifth year. We will but briefly refer to an address on the former subject given by MacCraken of Detroit before the American Association of Colleges. MacCraken has two criticisms to make on the present requirements. In the first place, he cited numerous instances where the requirement of credentials showing a definite mimimum of hours spent on certain subjects, particularly college physics, has worked hardship on men who otherwise could easily qualify by examination.

His second criticism is directed against the nature of the subjects required. He found by personal investigation that a great many well

educated and successful practitioners were opposed to the requirement of college physics, which is largely mathematics, and of a year of foreign language. The majority recommended a review of elementary physics and more chemistry. The present requirement of English was approved.

The old academic courses in dead languages and Gothic English and similar ones that had chiefly for their purpose the exhibition of the fact that the student had the money and leisure to spend on something useless finds little place in a profession calling for high scientific attainments. Our objection to this kind of study is not that it is not good but that there are so many things better and vastly more important to learn.

Our criticisms have not been made in a fault-finding way. We have not been blind to the wonderful achievements of our educational institutions. The facilities and equipment they offer and the high scholariness of the instructors are matters to which every American can point with pride. The fact that we need offer no apology for the work our professional men are doing alongside of Europe's best is sufficient testimony to the worth of their training. In making these remarks we are not offering personal opinions, but are expressing the view-point of the practitioners who have proof of the pudding in the eating.

WITH THE AMERICAN RED CROSS AT THE FRONT.

Arm and leg wounds compose a large majority of the injuries received in battle, hence there is an enormous demand for splints—a framework upon which the injured member may rest in the most comfortable position.

Contrary to the layman's preconceived opinion of a splint, it is not a piece of wood, but, for the use of the American Army, is of steel framework with leather and felt padding. And most of them are of ingenuous invention, being far from simple affairs. The types are almost as numerous as the injuries for which they are made to aid in healing.

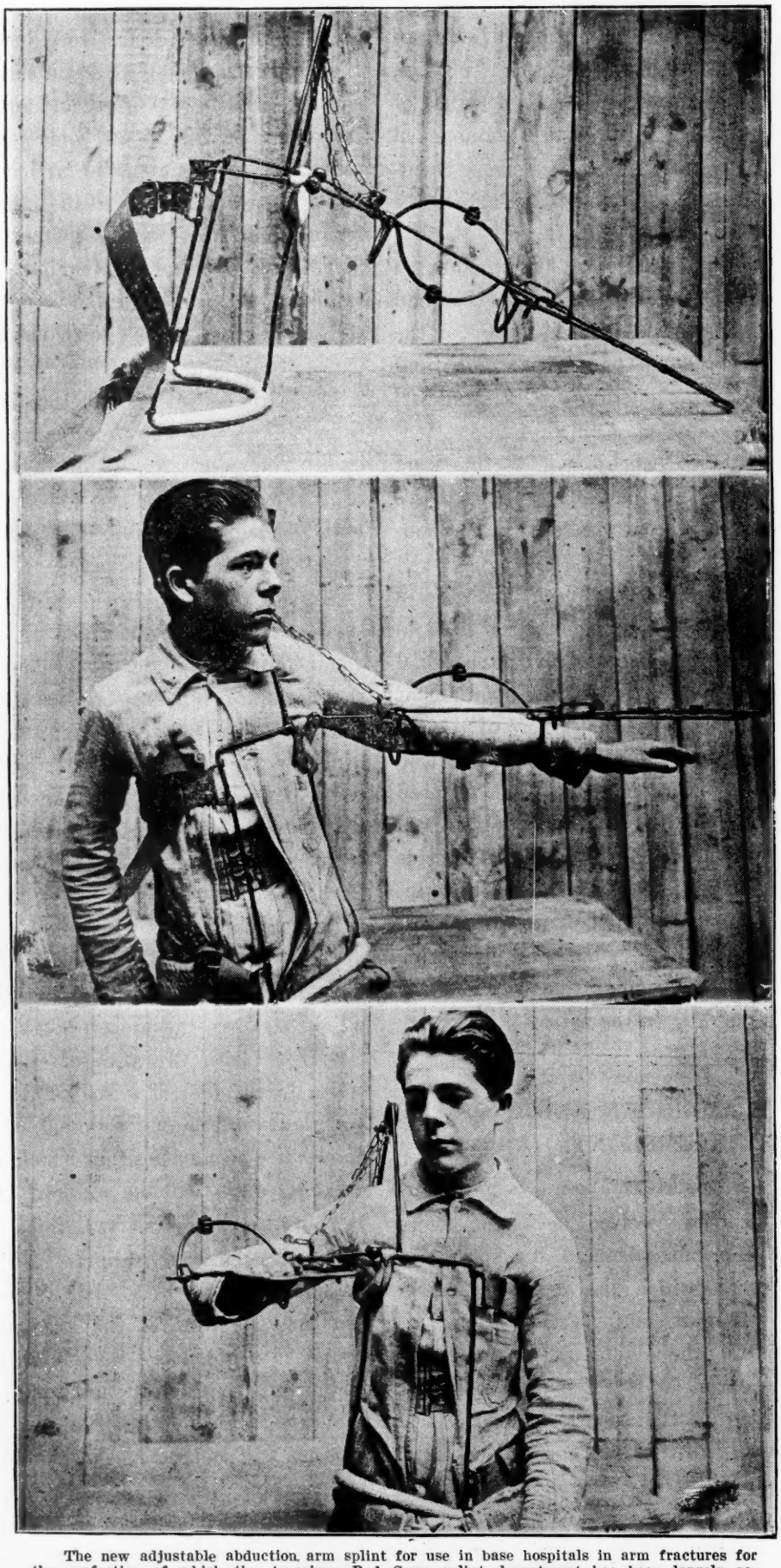
The American Red Cross has taken over the job of supplying all splints to the American Expeditionary Forces, and in the vernacular of the streets, it is "some job." The demand for these particular articles is increasing at a great rate due to the increasing activity of American troops on the battle front.

To meet this demand the Red Cross has established a splint manufacturing plant of its own in a large French town not far from the battle front.

While the splint construction is not complicated, it must be exceedingly careful and delicate. The splints that fit on the upper portion of the leg or arm must be carefully padded with felt and sheepskin. This work is done by French women and by hand.

Most of the leg and arm splints are made of steel rods bent in the shape of a U and are about four feet in length. They taper from the bottom to the top where a semi-circular steel rod, attached to each end of the U by a hinge, is padded well and attached. Upon the padded part rests the thigh or shoulder of the injured member. The wounded or broken leg or arm is bandaged between the two sides of the U. The bottom of the U is dented in order that a bandage may be attached to the bottom of the splint and the injured member for the purpose of pulling or applying the necessary weight to force the broken bones or torn muscles into place. It also serves to attach the splint to the foot of a bed or the front of an ambulance so that the wounded leg or arm may be elevated to any position which will give the greatest comfort to the sufferer.

There are numerous variations of this basic splint. Some have a hinge in the center of both sides of the U, so that an injured leg or arm may be bent at the knee or elbow and bound into position. Some have a hand rest at the end, by which the hand may be bandaged into an immovable position, so that injured muscles will not be moved by unconscious effort. Then there is the U splint with an unmovable padded steel circle at the top, which fits close to the leg or shoulder crotch. A splint of this type is also made with hinges so



The new adjustable abduction arm splint for use in base hospitals in arm fractures for the perfection of which the American Red Cross splint department has been largely responsible. The advantages of this splint are that it can be used for either arm and can be adjusted to any position.

that the arm or leg, stretched straight and fast, may be moved at the thigh or shoulder. There are small wire splints for the foot, the hand and the wrist.

All of them are made by hand in this factory, because of the lack of machinery. Even the welding and varnishing of the steel and wire, as well as the nickeling, is done in the Red Cross factory.

This is only one of the many activities from which the American Red Cross has relieved the Army. During the past few months the Red Cross has been forced to let contracts to various private manufacturers to furnish a sufficient supply of these necessary hospital appliances. But with the growth of its organization, it has established its own manufactory in the war zone of France, in order that there may be fewer transportation delays and better service in the work of relieving as much suffering as possible among American wounded.

W. D. H.

"SPANISH INFLUENZA"—A NEW TYPE OF BRONCHO PNEUMONIA.

The present epidemic of "Spanish Influenza" is imparting a somewhat peculiar experience for the profession. The term influenza has existed in the nomenclature of modern physicians for the past decade. Its use has been somewhat carelessly employed ever since 1890, when a similar epidemic swept this country. The term has been used as a handy camouflage for various types of bronchitis, rhinitis and streptococcic respiratory invasions and infections ever since the disease became pandemic in 1890.

The observant physician will have noted that during the past several years the scarlet fever and winter "grippe" epidemics are but varied manifestations of another type of this streptococci and its allied friend the pneumococcus. During the past month cultures taken from over a series of five hundred throats show findings of normal flora in two hundred throats of symptom free individuals and in the throats of some 1,000 individuals who were ill with the disease called Influenza only the pneumococcus of type two and three and occasionally four with the hemolytic streptococcus were demonstrated. In a considerable number of additional throat cultures as well as in those previously reported upon there has in no instance, in so far as we have been able to ascertain, been revealed the Bacillus of Pfeifer. The question then remains a mooted one as to whether this epidemic should be termed "Spanish Influenza" in type or whether it is simply a pneumo-streptococcic invasion of the respiratory tract of an increasedly virulent type. The public press has undoubtedly confused the situation and intensified the hysteria by its customary sensational reports and comments. We are of the opinion that its epidemic character has resulted largely by reason of the mobilization of large numbers of troops in cantonments and in our larger cities where large audiences and crowds are accustomed to gather for this is essentially a crowd disseminated disease.

Like all other pandemics a few weeks of experience is more valuable than volumes of comments upon what one may expect to find in this so-called new entity. The description of Spanish Influenza imparted three weeks ago is not at all applicable to the disease as it is now occurring in Michigan and in some of our Southern and Western cities and cantonments. These early descriptions laid stress upon albuminuria and hematuria and some went so far as to describe symptoms of gangrene, general and localized suppurative processes and similar unusual conditions which we learn from several doctors who have been privileged to see large groups of cases and who state that these conditions were wholly absent.

One of our informants has had the opportunity of studying about fifty of the earlier cases. He realized that they had a new condition to deal with and the sudden onset, high temperatures, scarletiniform eruption, coryza, the peculiar and typical pharyngeal and tonsilar inflammations, the extreme prostration and the intense back or headache with conjunctival injection all of which accompanied by a low pulse rate, chills and a facial flushing

tended to cause him to incline to the opinion that it was and is but an aggravated form of "grippe" with a predilection to pulmonary manifestation in the more severe cases. The striking finding in the early stages as compared with the later course of the disease was a "dry" chest with characteristic findings.

It was not known at that time that they were dealing with a potential broncho-pneumonia, but with accumulating experience as the number of afflicted increased the stethoscope led in the right direction for almost invariably on the third or fourth day of continued temperature elevation an area about the size of a dollar was detected posteriorly in the left apex and the right apex down to the fourth rib. With it there was elicited a sharp broncho-vesicular to tubular breathing. A similar area would be found below the angle of each scapula and coincidently there would appear in the sputum the first streaks of blood.

In one group of twenty-seven cases seen and diagnosed, broncho-pneumonia on the second day the following results were noted: One death, six cases the symptoms subsided in from three to five days and twenty cases that pursued a true course of broncho-pneumonia. One case that ended fatally gave a type three pneumococcus while the remaining all showed type two or three and no-hemolytic streptococci. It is hoped that the laboratories of our several cantonments will make complete reports upon the type of bacteria as soon as they have had the opportunity to digest their statistics and data.

Clinically the cases can be divided into three classes:

First: The "mild cases" running a short course with sudden onset, high fever, flushed face, chest and arms, coryza, rhinitis, ringing in the ears, dry ringing cough with complete prostration and a rapid drop in temperature and amelioration of all symptoms within two to five days. The striking feature is the sudden and complete prostration and a desperate picture of acute illness that will never be forgotten by anyone who has seen a goodly number of these cases.

Second: The more severe cases with the above onset plus a marked chill, sub-sternal pain with a dry harsh sounding chest and areas of broncho-vesicular breathing in the posterior upper lobes and in which recovery occurs by lysis in seven to fourteen days. In this type as well as in the third type it is common to encounter a severe epistaxis about the third day and which persists intermittently for three or four days. There will also be found varied degrees of hyperaesthesia of the skin over the chest and abdomen.

Third: In about 20 per cent. of all those who became afflicted a true broncho-pneumonia results. The pneumonia is of a virulent type and of comparatively short course. The extensive involvement of both lungs is marked and is evidenced by the peculiar cyanosis that is noted one or two days before death occurs, while in some this cyanosis is present and striking in the very early stages of the acute onset.

Treatment is but symptomatic and as yet no definite or successful plan has been outlined. The most important thing is confinement to bed, hygiene, competent nursing, and active elimination. The use of an alkaline, the ingestion of large amounts of fluids, the use of digitalis early and ordinary stimulation is of some value. It is the conclusion of those who have passed through a large series of these cases that medication is of but little value in arresting the disease when lung involvement is demonstrated and that recovery is dependent solely upon personal resistance with competent nursing care. It is also noted that the stout plethoric individuals and those of the athletic type of young manhood fall easy victims to this disease.

We are not at all inclined to advance any definite statements regarding this epidemic for the reliable data is not available to make such comment or to offer any suggestions as to its prevention. Neither is the information at hand to comment or criticise upon the situations in cantonments or the methods by which the afflicted soldiers were cared for—that is

withheld until some future time and until then we are trusting that we will witness a critical study of the situation.

Editorial Comments

How many times, doctor, do you mention *The Journal* "ads" when dealing with our advertisers? Help us to impress on advertisers the value of their "ads" in our Journal.

The work of the State Anti Tuberculosis is deserving of the enthusiastic support of every doctor who has the interests of the public at heart. Gradually and more successfully they are bringing the public to realize the appalling loss that this scourge creates.

Some fifteen of our Detroit physicians responded to the emergency call from Camp Custer for medical assistance during the recent influenza epidemic in that Camp. These men rendered splendid service and incidently were afforded an opportunity of studying these sick soldiers' physical manifestations of the disease. During their residence in Camp they shared "bunk and chow" with the medical officers. One observant member of this group could not reconcile the attitude of the Christian Scientist Camp workers with the teachings of Mrs. Eddy. These Christian Science workers were ever alert to see that their faces were protected with a face mask to guard against bacterial infection. Evidently the "faith" is not of sufficient efficacy to guard against an attack of the "flu." Further comment is unnecessary.

The following formula used as a gargle has been satisfactorily demonstrated as being destructive to the pneumococcus. Repeated bacteriologic examination has proven its effectiveness and rendered throats free of the pneumococcus. It is a most effective gargle and is used in the strength given.

Quinine Sulphate or Bi-Sulphate, grs. VI.
Thymol.
Ol Gaultheriar.
Ol Meuth Pip. a. a. drm. I.
Aquae q. s. to Gal I.

An investigation of the promiscuous abuse of postal franking privileges and an unproductive use or rather waste of paper and labor by the National Council of Medical Defense and the M. C. V. S. as directed by Martin et. al., would be timely and pertinent. "Martinism" has created an uncalled state of confusion through palpable errors and meddlesome interference with military authorities. The day of reckoning is not far distant.

The peculiar flushing of the face, the dull eye and the coincident deep cyanotic hue of the ears, lips and nose enables one to promptly detect the influenza form of the disease and differentiates it from th ordinary acute coryza and cold. Once seen it will never be forgotten.

Commence preparing for our next Loan. Systematically lay aside a definite amount of your collections for your next purchase.

If Germany and its subjects should surrender unconditionally it might be well to clean up the Mexican situation before our Army is mustered out. We have always felt that that "Mexican job" was never properly finished.

The devotion to duty of medical officers during the epidemics in our several cantonments merits particular commendation. They bent to the task unselfishly and self was forgotten in the long hours of continued administration to the sick soldiers who poured into the infirmaries and hospitals at the rate of 100 an hour during the first week of the epidemic.

Correspondence

From the War Demonstration Hospital.

October 1, 1918.

To the Editor:

A gradually increasing misconception of the Art of Anaesthesia has led to a rather unique condition of affairs.

We find that nurses and other lay persons may, by the simple acquisition of a few rules, become anaesthetists. Large institutions have adopted the nurse anaesthetist upon grounds of economy, expediency and even sentimentality. It is argued that these workers can be employed at little expense, that the supply meets the demand and that the feminine element eliminates fear and works for smoothness during the induction of the anaesthesia.

These institutions may employ lay persons to take their X-ray pictures and to make urinary, blood or sputum examinations but does any one dream of speaking of these workers as the hospital Roentologist or the attending Pathologist? They are employed as technicians. The nurse who administers an anaesthetic is an anaesthetic technician. She can never be more without a Medical degree for

in order to understand the language of anaesthesia one must have intimate acquaintance with anatomy, physiology, medicine, surgery, diagnosis, psychology and special branches.

The nurse who in discussion with a medical man attempts to defend a theory relating to anaesthesia can not fail to feel the presumption of it and, if graced with wit, to see the absurdity of such a position. Yet it has actually come to pass that medical men have suffered themselves to be instructed by a nurse in the theory and practice of anaesthesia.

In justice to an important branch of surgery and to our medical confreres who devote their training and their energy to its development let us drop the term Anaesthetist as applied to its non-medical workers and adopt the term Anaesthetic Technician.

Paluel J. Flagg.

Deaths

Dr. J. A. Ferguson died at his home in the Soo, Chippewa County, October 4, 1918. Dr. Ferguson was a leading and highly respected member of his community. He was a graduate in Arts from McMaster University, Toronto, in 1897 and graduated from the same school in Medicine in 1903. He acted as surgeon for the Chippewa and Edison Sault Electric companies and the Minneapolis, St. Paul, and Sault Ste. Marie Railroad. Although in ill health, he served on the district draft board as long as his condition permitted. He was a member of the Chippewa County Medical Society.

Dr. Carl Sears, age 37 years, died at his home in Quincy, Michigan, October 13, 1918. He was a member of the Branch County Medical Society, and very highly esteemed by his colleagues.

State News Notes

The ninth annual meeting of the Clinical Congress of The American College of Surgeons scheduled to be held at New York, October 21-25, has been canceled, owing to the influenza epidemic.

Dr. Garner M. Byington, of Charlotte, has been appointed a member of the Michigan State Board of Health.

Be an Unconditional American and buy your share of Liberty Bonds.

COUNTY SOCIETY NEWS

It is the Editor's desire to have this department of the Journal contain the report of every meeting that is held by a Local Society. County Secretaries are urged to send in these reports promptly

BAY COUNTY

The Bay County Medical Society met September 16, 1918, at the residence of Dr. T. A. Baird, Bay City. Drs. W. R. Ballord, Wm. Kerr and others discussed the subject of "Soldier Examinations."

CLINTON COUNTY

The Clinton County Society held a regular meeting, October 3. Dr. Carl V. Wheeler of the University of Michigan, gave an illustrated talk on the effects of poisonous gases used in warfare.

The following officers were elected: President, Dr. W. N. Taylor; Vice-President, Dr. Ernest Schemer; Secretary and Treasurer, Dr. C. T. Foo; Delegate, Dr. F. E. Luton; Alternate Delegate, Dr. E. L. Martin.

EATON COUNTY

The Eaton County Medical Society met on Thursday, October 3rd, at Eaton Rapids. Dr. E. L. Eggleston of Battle Creek gave a lantern slide lecture on Peptic Ulcer.

KALAMAZOO COUNTY

The Kalamazoo Academy of Medicine held a regular meeting October 8, 1918, at the Park-American. Capt. J. G. Taylor, of Camp Custer, conducted a Heart Clinic.

WAYNE COUNTY

The Wayne County Society held a general meeting, October 7, at which Major Geo. E. McKeane, who has recently returned from France, related his

impressions of Medicine and Surgery in France.

A regular meeting was held on October 14. Dr. D. O. Donovan reported three cases of paralysis. Drs. David Inglis and Jos. Andries discussed his paper. Dr. Wm. M. Donald read a paper on "Spanish Influenza." The paper was based on an intensive study of two weeks on the New England Coast in hospitals, camps, and private homes.

The new officers were installed at a regular meeting of the Wayne County Society, September 23. Dr. Jno. Bell succeeds Capt. Clarence Simpson as President. Dr. Ray Andries remains as Secretary. Dr. Wm. Morley holds the office of Treasurer.

Book Reviews

CLINICAL DIAGNOSIS. By Jas. C. Todd.

This manual has gone through four editions and we must, therefore, concede to it a well affirmed popularity. A good deal of the favor with which it is met, may perhaps be accounted for by the fact that the author is a teacher of long experience who has been conscientious enough to painstakingly study the needs of his students and adapt his teaching to them.

A book like this, intended for the use of the medical student should be more explicit and should confine itself more to description of technique and actual working difficulties than to significance of tests. It is far more valuable when it reflects a decidedly personal viewpoint.

The student can not get a very practical laboratory training from reading second hand description of classical methods that the author himself, modifies or disregards. In the few hours allotted to him for this work he may be well content if he learns one way of doing a thing, regardless of how many others there may exist. This is not ideal nor does it tend to cultivate originality but it is highly practical.

It is well enough for a laboratory expert to make a study of different methods, but in a medical text book he should be content to describe the particular methods he practices and to point out the errors and difficulties that an inexperienced man will fall into.

SURGICAL TREATMENT by James Peter Warbasse, M.D., in three volumes with 2,400 illustrations. Published by W. B. Saunders Co., Philadelphia and London.

There are many features about this work that commend it to the practicing surgeon. Descriptions of methods employed and technique are lucid and full. The entire field of surgical treatment is exhaustively covered. While the illustrations are profuse they are well chosen.

Miscellany

VACCINES IN INFLUENZA.*

*From Editorials in the Journal A.M.A., October 19, 1918.

With the appearance of the epidemic of influenza, reports began to appear, chiefly in newspapers, as to new serums, vaccines, drugs and other methods for checking and even for curing the disease. A few samples of such as have come to The Journal appear in our Tonics and Sedatives Department this week. In Massachusetts, Commissioner E. R. Kelly appointed two committees to investigate the value of influenza vaccines as a preventive agent and as a treatment of the disease. The first committee, a special board for scientific investigation, consisting of Dr. M. J. Rosenau, chairman, and Frederick P. Gay and George W. McCoy, was appointed to consider the evidence available on the prophylactic and therapeutic use of vaccines against influenza. This committee presented the following conclusions:

1. The evidence at hand affords no trustworthy basis for regarding prophylactic vaccination against influenza as of value in preventing the spread of the disease, or of reducing its severity. The evidence from the present epidemic, though meager, suggests that the incidence of the disease among the vaccinated is smaller than among the nonvaccinated. The board, therefore, concludes that further experimental evidence should be collected.

2. The evidence at hand convinces the board that the vaccines we have considered have no specific value in the treatment of influenza.

3. There is evidence that no unfavorable results have followed the use of the vaccines.

The second committee, known as the Special Board of Statistical Investigation, consisted of Dr. George C. Whipple, chairman, William H. Davis and F. C. Crum. This committee reported:

1. The weight of such statistical evidence as we have been able to accumulate indicates that the use of the influenza vaccine which we have investigated is without therapeutic benefit. Exceptional cases where apparent benefit has resulted from the use of the vaccine can be matched by other cases where similar recoveries have been made without vaccination.

2. The statistical evidence, as far as it goes, indicates a probability that the use of this influenza vaccine has some prophylactic value.

3. There is also some evidence in the effect that other methods of protection, such as open-air treatment and the use of proper masks, are effective in protecting exposed attendants, and the use of vac-

cine should not be taken as an excuse for omitting such safeguards.

As a result, the following recommendations were made:

That the State encourage the distribution of influenza vaccine intended for prophylactic use, but in such manner as will secure scientific evidence of the possible value of the agent. The use of such vaccine is to be regarded as experimental.

That the State shall neither furnish nor endorse any vaccine at present in use for the treatment of influenza.

These reports are conservative, and offer to other health commissioners and their communities a reliable guide as to procedures that should be adopted before subjecting or trying out on the public any method of prevention or treatment that may be offered. These matters are the domain of medical science, and medical scientists of recognized ability should be called on to make the decision.

To settle any doubts that may exist as to the status and authority of the V. M. S. C. we reprint from Journ. A.M.A. the following:

To the Editor: Desiring information for my own guidance in making selection of physicians for appointment as examiners on Local Boards and Medical Advisory Boards, I made inquiry of the Provost Marshal-General's Office in reference to the use, if any, he had directed should be made of the Volunteer Medical Service Corps. His reply may be useful to medical aides and others, and I send it to you for publication with the sanction of General Crowder.

John M. Dodson, M.D., Chicago.

General Crowder's letter says in part:

* * * the Provost Marshal-General has had no thought of employing the Volunteer Medical Service Corps, as an organization, for any purpose, nor has any need for its aid arisen. On the other hand, many of its members have doubtless been utilized, individually, in the physical examination of drafted men. The medical profession has given most earnest and whole-hearted support to the work of the Selective Service, and no unofficial intermediary is required between its members and the Provost Marshal-General.

F. H. Crowder, Provost Marshal-General.

BRITISH STATISTICS IN THE REGISTRATION AREA OF THE UNITED STATES: 1916.

Washington, D. C., Oct. 28, 1918.—In the recently established birth-registration area of the United States—comprising the six New England states, New York, Pennsylvania, Maryland. Michigan, Minnesota, and the District of Columbia, with an estimated population of 33,000,000, or about 32 per cent. of the total population of the United States—818,983 infants were born alive in 1916, representing a birth rate of 24.8 per 1,000 population. The total number of deaths in the same area was 486,682, or 14.7 per 1,000. The births thus exceeded the deaths by more than 68 per cent. For every state in the registration area, for practically all the cities, and for nearly all the counties, the births exceeded the deaths, usually by substantial proportions. The mortality rate for infants under one year of age averaged 101 per 1,000 living births. The foregoing are among the significant features of the report, "Birth Statistics in the Registration Area of the United States: 1916," soon to be issued by Director Sam L. Rogers, of the Bureau of the Census, Department of Commerce, and compiled under the supervision of Dr. William H. Davis, chief statistician for vital statistics.

Comparison With 1915.

The birth rate for the entire registration area fell below that for 1915 by one-tenth of 1 per 1,000 population; while the death rate exceeded that for 1915 by seven-tenths of 1 per 1,000. The excess of the birth rate over the death rate for 1916, 10.1 per 1,000, was thus a little less than the corresponding excess for 1915, which was 10.9 per 1,000. If the birth and death rates prevailing in the later year were to remain unchanged, and if no migration were to take place to or from the area to which they relate, its population would increase annually by about 1 per cent. This rate, compounded for a decade, would yield a decennial increase of a little more than 10 per cent., or about half the rate of increase in the population of the country as a whole between the last two censuses, 21 per cent.

White and Colored.

Of the total number of births reported, 799,817, or 24.9 per 1,000, were of white infants, and 19,166, or 22.8 per 1,000, were of colored infants. The death rates for the two elements of the population were 14.5 and 24.4 per 1,000, respectively. The deaths reported for the colored races (comprising all nonwhites) thus exceeded the births reported; but it is probable that the registration of births is less nearly complete among the colored than among the white population, and that therefore the rate shown for the former class is too low, whereas in the case of the death rates there is probably not so great a margin of error.

Native and Foreign Mothers.

Some indication of the fecundity of the native and foreign elements of the population may be obtained from a comparison between the proportion which the number of white foreign-born mothers formed of the total number of white foreign-born mothers to whom children were born in 1916, and the proportion which the white foreign-born married women, aged 15 to 44, formed of the total number of white married women of corresponding ages in 1910.

From the table following, it appears that many more births occur to white foreign-born women, proportionately to their number, than to native women. In Connecticut, approximately 46 per cent. of white married women aged 15 to 44 in 1910 were of foreign birth, but about 62 per cent. of the white mothers to whom children were born in 1916 were natives of foreign countries.

State.	1916. Per cent. which foreign-born mothers formed of total white mothers.	1910. Per cent. which foreign-born married females, 15 to 44, formed of total white married females, 15 to 44.
Connecticut	61.63	46.36
Maine	27.23	21.89
Maryland	14.82	13.11
Massachusetts	56.32	48.87
Michigan	32.80	26.45
Minnesota	26.80	33.99
New Hampshire	41.69	32.69
New York	52.84	42.71
Pennsylvania	37.65	27.77
Rhode Island	57.37	49.94
Vermont	24.04	18.11

Infant Mortality.

The infant-mortality rate—that is, the number of deaths of infants under one year of age per 1,000 born alive—throughout the registration area as a whole was 101 in 1916, as against 100 in 1915. This is equivalent to saying that of every ten infants born alive one died before reaching the age of one year. Among the 11 states these rates ranged from 70 for Minnesota to 121 for Maryland; and for the white population separately the lowest and highest rates were 69 for Minnesota and 115 for New Hampshire. The high rate for the total population of Maryland was due to the presence of a larger colored element in that state than in any of the others, the rate for the whites alone being only 101.

The infant-mortality rates vary greatly for the two sexes and for the various nationalities.

With an infant-mortality rate of 101 for the registration area as a whole, the rate ranges for white children from 68 where mothers were born in Denmark, Norway, and Sweden, to 148 where mothers were born in Poland, while Negro children have a rate of 184. The range of rates among white males is from 74 for children of mothers born in Denmark, Norway, and Sweden, to 171 for those of mothers born in Poland, while Negro males have a rate of 202. The corresponding rates for females were 62, 124, and 166, respectively.

States and Cities.

The following table shows, for the birth registration area, by states and by cities having more than 100,000 inhabitants in 1910, the number of births in 1916, the per cent. of excess of births over deaths, and the infant-mortality rate. Figures for the white and colored elements of the population are shown separately for those areas in which colored persons constitute more than one-tenth of the total population.

Excess of Births Over Deaths, and Infant Mortality: 1916.

Area.	Number of births.	Excess of births over deaths (per cent.)	Deaths of infants under 1 year of age per 1,000 living births.
Registration area	818,983	68.7	101
Registration states.			
Connecticut	35,351	74.2	101
Maine	16,033	32.5	108
Maryland, total	33,631	49.7	121
White	27,305	63.9	101
Colored	6,326	6.0	209
Massachusetts	93,497	65.1	100
Michigan	86,840	88.1	96
Minnesota	55,459	127.1	70
New Hampshire	9,664	35.4	115
New York	241,456	58.8	94
Pennsylvania	217,449	74.7	114
Rhode Island	14,634	53.5	111
Vermont	7,768	37.2	93
Registration cities having more than 100,000 inhabitants in 1910.			
Connecticut:			
Bridgeport	4,598	94.8	106
New Haven	5,106	100.6	88
Maryland:			
Baltimore, total	14,542	36.5	122
White	12,278	54.1	104
Colored	2,264	[1]—16.6	219
Massachusetts:			
Boston	19,577	53.3	105
Cambridge	2,691	76.3	91
Fall River	3,689	68.8	173
Lowell	3,287	67.6	146
Worcester	4,941	70.2	101

Area.	Number of births.	Excess of births over deaths (per cent.)	Deaths of infants under 1 year of age per 1,000 living births.
Michigan:			
Detroit	24,289	121.6	112
Grand Rapids	3,131	100.00	75
Minnesota:			
Minneapolis	8,793	95.2	82
St. Paul	5,242	87.6	68
New York:			
Albany	2,280	11.4	97
Buffalo	13,088	73.5	114
New York	137,923	77.0	93
Rochester	6,816	82.6	86
Syracuse	3,853	63.2	100
Pennsylvania:			
Philadelphia	40,360	45.7	105
Pittsburgh	16,406	62.6	115
Scranton	3,623	71.5	131
Rhode Island:			
Providence	5,981	48.7	110
District of Columbia:			
Washington, total	7,201	11.2	106
White	4,979	25.3	83
Colored	2,222	[1]—12.2	158

[1] Per cent. by which births fell below deaths.

NEW AND NON-OFFICIAL REMEDIES.

Chlorcosane—Squibb.—It complies with the standards for chlorcosane, N. N. R. Chlorcosane is a liquid, chlorinated paraffin containing its chlorine in stable (non-active) combination. It is used as a solvent for dichloramine-T and is itself without therapeutic action. E. R. Squibb and Sons, New York.

Thromboplastin Solution—Armour.—An extract of cattle brain in physiological sodium chloride solution prepared according to the method of Hess. It complies with the description of Solution Brain Extract, N. N. R. As a hemostatic, the solution is applied directly to bleeding tissues or applied by means of a spray or tampon. See New and Nonofficial Remedies, 1918, p. 136 under "Fibrin Ferments and Thromboplastic Substances (Kephalin). Armour and Co., Chicago.

Corpus Luteum Capsules, 2 Grains.—Each capsule contains 3 grains of corpus luteum—Armour (see New and Nonofficial Remedies, 1918, p. 237). Armour and Co., Chicago.

Salipyrine Tablets, 7½ Grains.—Each tablet contains 7.5 grains of salipyrine (see New and Nonofficial Remedies, 1918, p. 275). Riedel and Co., New York.

Antipneumococcus Serum Type 1, Gilliland.—It is marketed in vials containing 50 Cc. The Gilliland Laboratories, Ambler, Pa.

Phenylcinchoninic Acid—Abbott.—A brand of phenylcinchoninic acid, U. S. P. (see New and Nonofficial Remedies, 1918, p. 269). The Abbott Laboratories, Chicago.

Parresined Lace—Mesh Surgical Dressing.—Net mesh gauze impregnated with and containing from 45 to 50 per cent. of parresine (see New and Nonofficial Remedies, 1918, p. 247). The Abbott Laboratories, Chicago.

Halazone—Squibb.—A brand of halazone complying with the standards for halazone, N. N. R. It is marketed only in the form of Tablets Halazone-Squibb 1-16 Grain, each containing halazone-Squibb, 1-16 grain, anhydrous sodium carbonate, 1-16 grain, and sodium chloride, 1⅜ grains. Halazone tablets are used for the sterilization of drinking water one or two tablets being added to one quart of water. E. R. Squibb and Sons, New York (*Jour. A.M.A.*, Sept. 28, 1918, p. 1059).

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Non-proprietary Articles:
BENZYL ALCOHOL.
Armour and Company:
Corpus Luteum Capsules, 2 Grains.
THROMBOPLASTIN SOLUTION—Armour.
Gilliland Laboratories:
ANTIPNEUMOCOCCUS SERUM, TYPE I.
Hynson, Westcott and Dunning:
PHENMETHYLOL—H. W. and D.
Phenmethylol Ampules, 1 per cent., H. W. and D.
Phenmethylol Ampules, 2 per cent., H. W. and D.
Phenmethylol Ampules, 4 per cent., H. W. and D.
Riedel and Company:
Salipyrine Tablets, 7½ Grains.
E. R. Squibb and Sons:
CHLORCOSANE—Squibb.
Halazone—Squibb Tablets, 1-16 Grain.
SOLARGENTUM—Squibb.

PROPAGANDA FOR REFORM.

An Italian View of the Proprietary Evil.—A Murri, professor of clinical medicine at Bologna,

protests against the way he is importuned to prescribe only made-in-Italy pharmaceuticals. He declares his unswerving patriotism, but insists that the physician's duty is to prescribe that which is best to restore the health of his patients. He holds that to elevate the pharmaceutical industry of Italy, there must be founded a supreme council of chemists, pharmacists and clinicians who will examine the made-in-Italy pharmaceuticals with the severest scientific impartiality (*Jour. A.M.A.*, Sept. 7, 1918, p. 840).

Dr. A. W. Chase's Nerve Pills.—According to the label, these ills are "used in the treatment" of "thin and watery blood, nervous disorders, brain fag, nervous headache, nervous dyspepsia, irregular heart action, sleeplessness," etc. A circular in the box calls attention to the use of these pills in the treatment of almost everything from pale, sallow complexion, to paralysis and locomotor ataxia. An analysis made in the A.M.A. Chemical Laboratory indicates that "Dr. A. W. Chase's Nerve Pills" contain iron, possibly in the form of ferrous sulphate which is in a state of more or less decomposition, manganese dioxid, aloes or aloin, vegetable extractive, and a trace of an alkaloidal drug (*Jour. A.M.A.*, Sept. 7, 1918, p. 844.)

The Patriotic Medical League in Italy.—In a recent issue of the Unione dei Medici Italiani per la Resistenzia Nazionale of Italy, the work of the A.M.A. Council on Pharmacy and Chemistry is described in detail. The description of the work of the Council is by Dr. V. Ronchetti, physician in chief of the Ospedale Maggiore of Milan. He refers to the work of the Council to show what is being done in the United States in this line, "in a truly, admirable, simple and practical manner," and compares this with the ineffectual control of pharmaceuticals in Italy. He holds that it should not be a difficult matter to co-ordinate certain departments in Italy's universities to form the nucleus for an instituto di controllo for medicinal products—an institution which would serve as a guarantee for the sick, as a guide for the manufacturing chemists in their production, and for physicians in their application of the products (*Jour. A.M.A.*, Sept. 14, 1918, p. 918).

Eatonic.—If one believes the claims of the Eatonic Remedy Co., Chicago, "the Advanced Scientific Thought of the Medical World has been called upon to produce Eatonic!" According to newspaper advertisements, Eatonic "Instantly relieves heartburn, bloated, gassy feeling, stops acidity, food repeating, and stomach misery." From the analysis in the A.M.A. Chemical Laboratory, it appears that Eatonic comes in the form of tablets each containing approximately 5.5 grains calcium carbonate, 15 grains sugar, 3.25 grains charcoal, with peppermint and undetermined material. Eatonic will do nothing that can not be done as well by a "sodamint tablet" (*Jour. A.M.A.*, Sept. 21, 1918, p. 993).

Campetrodin and Campetrodin No. 2.—The A.M.A. Chemical Laboratory reported to the Council on Pharmacy and Chemistry that from the advertising of the A. H. Robins Company, Richmond, Va., it appeared that Campetrodin and Campetrodin No. 2 are claimed to contain elementary (free) iodin in an "oleaginous solvent," and that the second preparation contains twice as much iodin as the first. The laboratory's examination demonstrated, however, that there was but a trace of free iodin in the preparations; that practically all of the iodin appeared to be in combination with a fatty oil, and that the second did not contain twice as much iodin as the first. Having considered this report of the analysis and the claims made for the preparations, the Council declared Campetrodin and Campetrodin No. 2 inadmissible to New and Nonofficial Remedies because of false statements as to composition and therapeutic action (*Jour. A.M.A.*, Sept. 21, 1918, p. 993).

Sugar Treatment of Tuberculosis.—Domenico Lo Monaco, professor of physiologic chemistry of the University of Rome, has studied the influence of the secretions of sugar parenterally introduced. He found that when persons with copious bronchial secretions are given subcutaneous injections of 4 or 5 gm. of sugar (saccharose), expectoration rapidly diminishes and ceases completely in many cases. It is claimed that an intramuscular injection of strong sugar solution is of considerable value in the treatment of the tuberculous in that by diminishing the bronchial secretion, it diminishes the cough and annoying night sweats. It is further suggested that the treatment will be useful in that it will decrease the amount of sputum scattered about by consumptives (*Jour. A.M.A.*, Sept. 28, 1918, p. 1083.)

Carminzym Not Admitted to N. N. R.—The Council on Pharmacy and Chemistry reports that Carminzym (Fairchild Brothers and Foster) is declared to contain in each tablet approximately 32 mg. of an extract of pancreas, 50 mg. sodium bicarbonate, 172 mg. prepared chalk, 1.5 mg. powdered ipecac and "aromatics q. s." Without considering other possible conflicts with its rules, the Council held the preparation inadmissible to New

and Nonofficial Remedies because it is an irrational mixture, the use of which is detrimental to therapy. The Council explains that the employment of mixtures of pancreatic extract, alkalis, ipecac and carminatives in fixed proportion leads to slipshod treatment and tends to make the practice of medicine mere kuesswork (*Jour. A.M.A.*, Sept. 28, 1918, p. 1081).

Deterioration of Argyrol Solutions.—The manufacturers of argyrol advise that argyrol solutions be made freshly when required. The need for this precaution is confirmed by a report of work which indicated that the gonococcidal activity of an argyrol solution began to decrease a few days after it had been made and had decreased 75 per cent. after two months (*Jour. A.M.A.*, Sept. 28, 1918, p. 1084).

Instability of Fluidextract of Ergot.—There is some difference of opinion among investigators as to the keeping quality of fluidextract of ergot However, it is clear that it loses its activity quite rapidly and may become inert within a year (*Jour. A.M.A.*, Sept. 28, 1918, p. 1804).

The Administration of Quinin.—From a study of the elimination of quinin in different diseases, it appears that for optimal effects it is best in most cases to give quinin every three or four hours in approximately 0.25 gm. doses, preferably by mouth except when there are gastro-intestinal disturbances, and here subcutaneous or intramuscular injection is indicated. Needless to say, the daily 2 gm. should be exceeded in cases of pernicious and primary malaria. The intravenous method should be employed in pernicious cases (*Jour. A.M.A.*, Sept. 28, 1918, p. 1086).

Two Misbranded Nostrums.—Brazilian Balm, directly or inferentially, was claimed to cure consumption, prevent lockjaw and "clear out of the system" the germs of typhoid and diphtheria. A shipment of the nostrum was seized by the federal authorities and ordered destroyed by the court.

Wright's Indian Vegetable Pills were claimed to cure yellow fever, smallpox, erysipelas, consumption, cancer, venereal disease, paralysis, epilepsy and other conditions too numerous to mention. The Government, having seized a shipment and charged that the claims were false, the proprietors of the pills admitted the allegation (*Jour. A.M.A.*, Sept. 7, 1918, p. 844).

Bitro-Phosphate.—The A.M.A. Chemical Laboratory reports that this appears to be a five-grain tablet of calcium glycerophosphate. Since a bottle containing forty-two tablets sells at one dollar and this price is sixteen hundred per cent. greater than the cost of the calcium glycerophosphate contained therein, it is asked if this comes within the excess profit tax. The claims made for Bitro-Phosphate are those which were made for calcium glycerophosphate when it was erroneously supposed that organic phosphates were more readily assimilated than inorganic phosphates. Bitro-Phosphate is sold by the Arrow Chemical Company. E. S. Prather, the present owner of this company, has been interested, directly or indirectly, in a considerable number of questionable products and schemes (*Jour. A.M.A.*, Sept. 14, 1918, p. 921).

Chloramine—T Tablets-Squibb, 4.6 grains.—Each tablet contains chloramine—T, 4.6 grains. E. R. Squibb and Sons, New York.

Dichloramine—T, Squibb.—A brand of dichloramine—T which complies with the New and Nonofficial Remedies standards. For a description of the action, uses, dosage, and chemical and physical properties, see New and Nonofficial Remedies 1918, p. 157. E. R. Squibb and Sons, New York (Jour. A. M. A. Aug. 31, 1918, p. 745).

COUNTY SECRETARIES ARE AGAIN REQUESTED TO SEND US RECORDS OF THEIR MEETINGS, CHANGE OF OFFICERS, ETC.